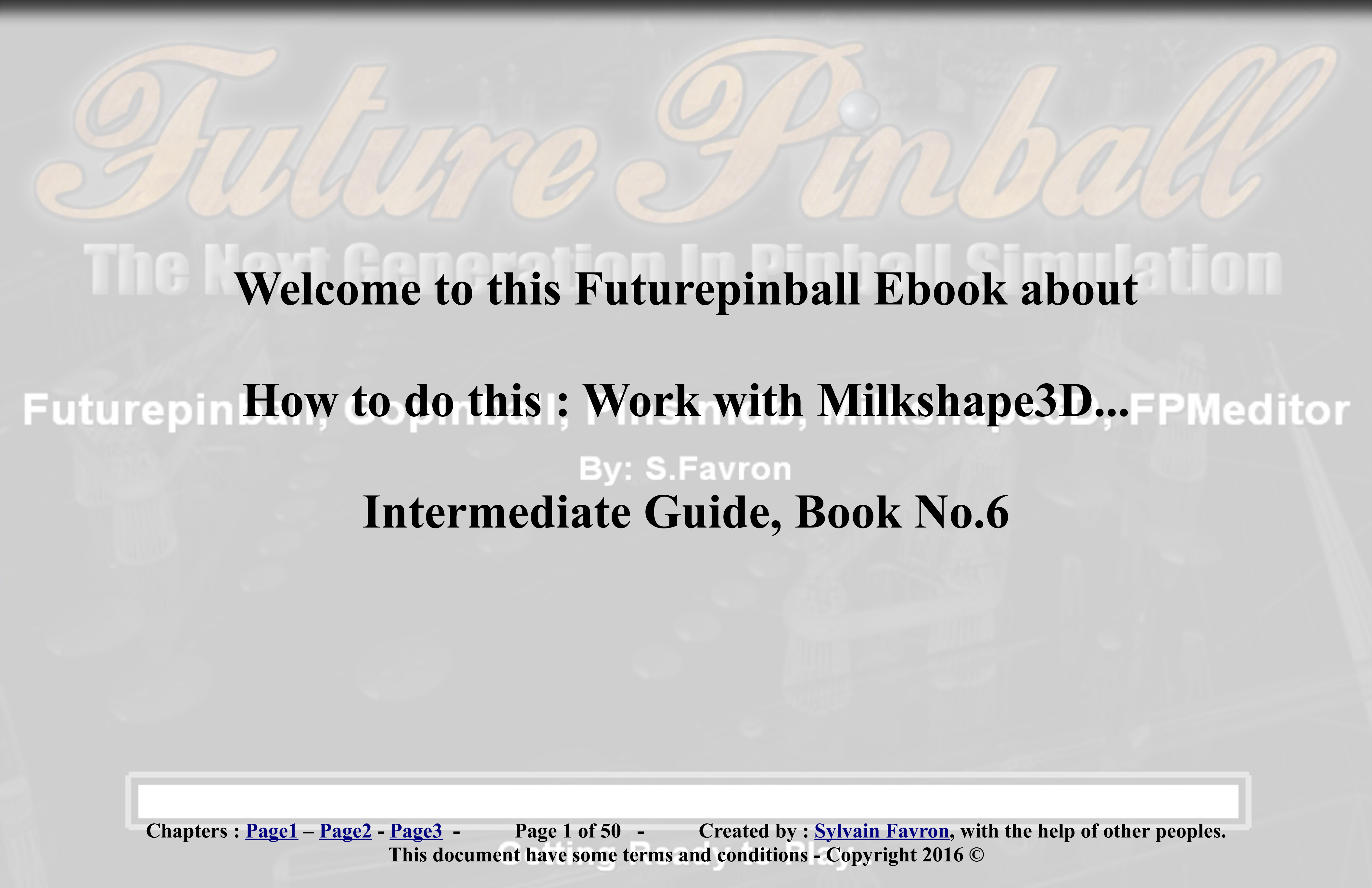

Welcome to this Futurepinball Ebook about

How to do this : Work with Milkshape3D...

Intermediate Guide, Book No.6

Terms and Conditions

The content in this guide is for your information and doesn't have an exhaustive characterization of the software. It is only for giving you some basic knowledge to understand more, how to do this...; with the software. The editor, writer and others can not be held responsible for all the errors or/and part errors and others. The images in this document were found on the web with the keyword "Free" and some other images and more in this file are also considered Free and available thank's to some peoples.

Even if the content is free, it doesn't give you and others, the right to use the document files freely, dismantle and others at any time. This Ebook is free, can be distributed freely, saved for safe keeping and no money is made from it. Also you agree to not pursue, not sue, ask money and others; the persons making this document possible. Note that you also agree all terms, conditions and others that can be modified, added, deleted and others at any times. This is writen to protect the peoples of: futurepinball, of gopinball, of pinsimdb, of milkshape3d, as myself.

Thank's to the peoples from http://www.Futurepinball.com, the peoples from http://www.Gopinball.com, peoples from http://www.Pinsimdb.org, peoples from http://www.milkshape3d.com and others; for giving me authorizations to take images, as there banners and others for this free personnal project of mine. Thank's also to GeorgeH from Gopinball.com, that helped with some grammar.

About this Ebook and the Creator of It

This document can be used as a basic intermediate guide using Milkshape3D, oriented for the software Futurepinball. When we say as an intermediate guide, we assume that you know how to use a software, open windows, create and save some files, use a mouse with 3 buttons including the scroll mouse button and keyboard.

In this guide we will use mostly the software:
"Milkshape3D v1.8.2"

In this book we will explain some basic knowledge about creating some 3D models, and texturing. Because of the numerous pages, also because some standard e-mail account can share files that have less then 5mb of weight. So some images also had to be used with poorer quality; so when zoomed become pixelized.

In Milkshape3D we will explain basic things, like the coordination of (X,Y,Z), the different windows, creating some basic 3d models, creating some vertex points, relating some vertex points that create some edge, moving some vertex points or edge, subdividing a face, what is the center point, importing your texture into milkshape, positioning your texture on your model; and others

I'll try to explain things as best as I can. I also experimented to see if the things are correct; as i did in my previous publications. The comments of my guides was very positive.

There is no need to worry about making some errors and performing some experimentation. I'm sure you'll do just fine!

Future Pinball
The Next Generation in Pinball Simulation
Futurepinball, Gopinball, Pinsimdb, Milkshape3D, FPMeditor
By. S.Favron
Getting Ready to Play

Here are some link's

http://www.futurepinball.com (The pinball software)	http://www.pinsimdb.org (Futurepinball tables to play)
http://www.gopinball.com (Forum website)	http://www.milkshape3d.com/ (Milkshape3D website)

Tables and Chapters page 1

Sections of this book:

- Terms and Conditions
- About this Book
- Link's to websites

- The Milkshape3D Interface
- The Projections Views
- The colored Center Point
- The Tool and Control Panel
- Three or Four Windows Scene View
- Showing or Hidding some Infos
- Field of View (FOV) & Zoom-In or Zoom-Out
- Shifting your Scene & Looking your 3D Model
- Explications of the 3D world
- Changing some Colors in your Scene
- The Top Text Menu File

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Getting Ready to Play

Tables and Chapters page 2

Sections of this book:

How To......

- Creating some Dot's and Joining Them
- Creating some Triangle Face
- The Draw Backface Option Important
- Moving a Vertex Point in the 3D view Scene
- Snaping a Vertex to the Grid & Giving some Movement Limitations
- Moving the Vertex with the Options (X , Y , Z)
- Moving some Edge
- Moving some Face
- Modifying a Cube
- Moving a Vertex of a Cube
- Moving more then One Vertex of a Cube & Manually Editing some Vertex Position
- Moving a Face of a Cube
- Scaling a Face of a Cube
- Mirror a Triangle Face
- Rotating a Cube
- Putting a Face in Front or in Back

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Tables and Chapters page 3

Sections of this book:

How To......

- Subdividing a Face & Dividing an Edge
- Create a Face by adding One Vertex Point to a Triangle
- Turning one Edge between Four Common Vertex Points
- Creating a Sphere
- Creating a Cylinder and Seeing the Top View Differences
- Creating a Plane
- Creating a Geosphere
- Extruding a Face
- See the Integrated Milkshape3D Models
- Do Fiew Experimentations
- Select a Face for a Texture
- Do some Texture Mapping

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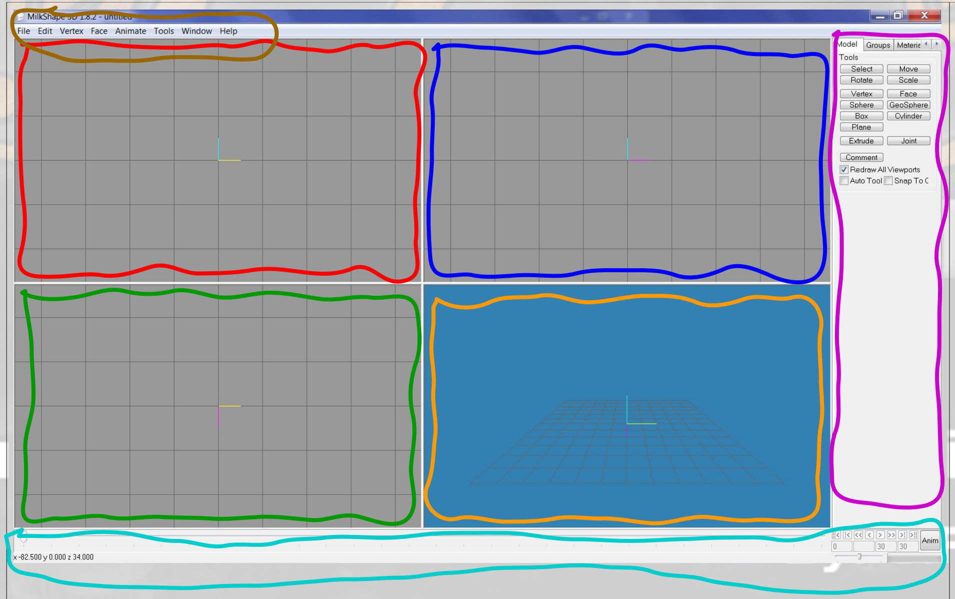
The Milkshape3D Interface



Here is the interface of Milkshape3d. There are 3 views and 1 3D perspective view.

The « Top-Left-Zone » should be the (**Front View**). The « Top-Right-Zone » should be the (**Left View**). The « Bottom-Left-Zone » should be the (**Top View**). The « Bottom-Right-Zone » should be the (**3D perspective view**).

The « Top-Text-Menu » is on the (**Top-Left**).
The « Control Panel » is on the (**Right**).
The « Keyframer » is at the (**Bottom**).

I say there should be these views because you can personalize Milkshape3D with your own views.

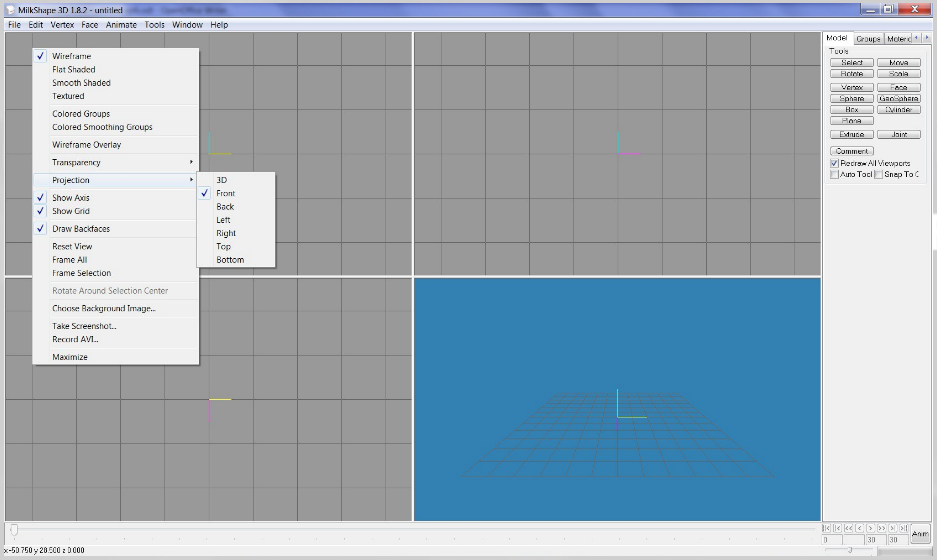
Now I'll try to explain it simply. Suppose that each view is a 90degree angle of the subject. Imagine there is also a 3D model in each zone of a single person that you know. Looking at this person with the (**Front View**), you would see your friend and see their face. From the (**Left View**) or (**Right View**) you would see the same person, but you would see one of their side; as if you would look at one of their ears. From the (**Top View**) you would see the person from the top, like you would be high-above; and look at their hair from the top. I'm sure you have guessed that the (**Bottom View**), it's like you would be looking at the clouds in the sky; or you would see some bubble gum under the shoes of your friend after seeing the clouds in the sky. The (**3D Perspective View**) is simply seeing the person you know from multiple angles.

The Projections

Here I'm going to explain how to change the different (**Views**). Remember Milkshape3D needs "**3 mouse buttons**". I assume that you have a 3 mouse buttons, and the middle button of the mouse can also be used to "**scroll**".

"Please Remember !!"

When I write: (**LMB**) mean "**Left-Mouse-Button**". When I write (**MMB**) mean "**Middle-Mouse-Button**". When I write (**RMB**) mean "**Right-Mouse-Button**".



To change the views of one of the zones, you simply point with your mouse into a zone selected.

After you do a (**RMB**), you should see a menu apear. You then select the word « **Projection** », which will make a sub-menu apear.

You can then choose what point of view you would want, after you click on the option that you want with the (**LMB**).

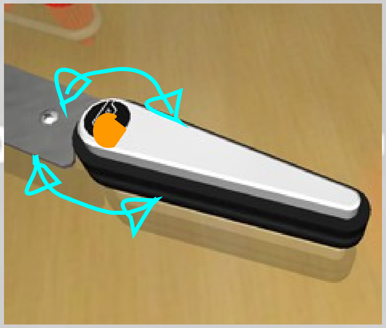
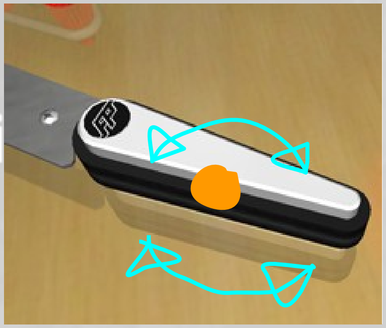
I dont know everything, but I'll try to explain things that I know in a simple way; as i did in my previous guides.

The Colored Center Point

You must have noticed that in each view of Milkshape3d there are some colored lines. These lines indicate the center of the 3D world. It is also the coordinations (**X=0, Y=0, Z=0**). When you export your **ms3d** model (**Milkshape3D Model**) into the software **FPMeditor** for Futurepinball. It is **important** that your center point is well placed onto your 3D model. The center point of the world in Milkshape3D can produce a lot of differences in behaviour of your model in Futurepinball.

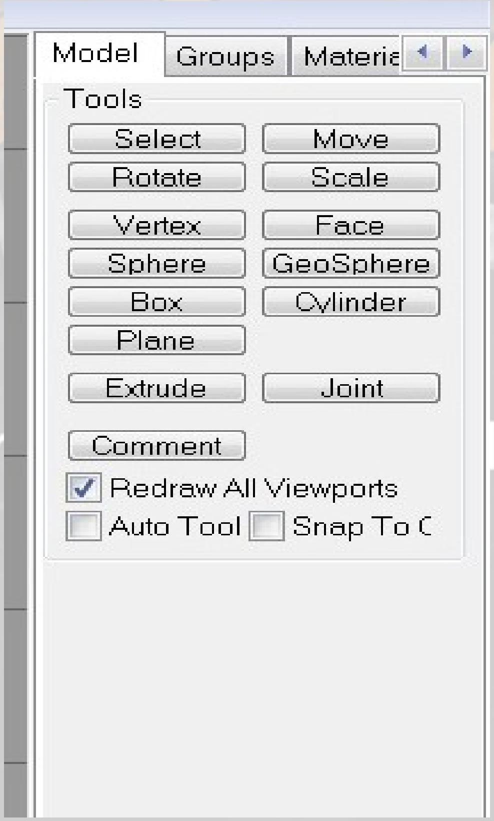
Here is an example of the same 3D model image. But the 3D model has been placed on different Milkshape3D world center point, which results in different behaviour when your 3D model is exported and imported into Futurepinball.

Futurepinball, Pinsimdb, Milkshape3D, FPMeditor
By: S.Favron

	
The Milkshape3D world center point, well placed on a 3D model, make the flipper of your pinball flip correctly.	The Milkshape3D world center point is placed at an other place, wich give to the flipper a different behaviour.

Note that the center point, can indicate different things on your Futurepinball model. This means (**Rotate**, **Translate**, **Elevate**, **etc**), briefly that it can make your model **act** differently. You might have noticed in Milkshape3D that the line colored in "**Yellow**" is the (**X**) axis, the line in "**Cyan**" is the (**Y**) axis and the "**Magenta**" line is the (**Z**) axis by default.

The Control Panel



☑ Redraw All Viewports
☐ Auto Tool ☐ Snap To C

There are different « **Tabs** » or « **Sections** » with some options of each section selected.

The « **Tabs** » are : (**Model/Groups/Materials/Joints**)

You can also use the little « **Triangles** » just beside the (**Tabs**) to see and click on one of the sections.

Model : Is the section to create a 3D form, like a cube, a sphere, a cylinder, etc. It can also be used to move and more.

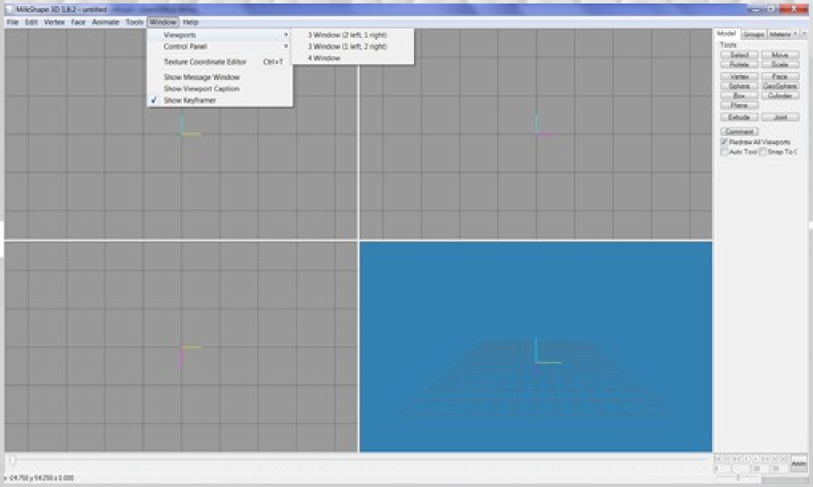
Groups : This is where you can select some grouped faces. Selecting and creating some grouped faces, will allow you to put some texture on it and more.

Materials : This is the section to choose and add some texture on your 3D model. Like putting some pillow-tissue (**Texture**) on your pillow (**3D Model**)

Joints : Is a place to setup some (**Joints**) and (**Bones**), like when creating some animation; if i'm correct.

Three or Four Window Views

By looking some youtube videos, reading some info on the web and doing some experiments with the Milkshape3d, it is possible to create some different views. I mean that you can have 4 windows to see your objects, you can have 3 windows also and much more. I dont know everything but it's important for me to make it easy for you to learn for yourself and to help you know this software.



To make it a 4 screen view or a 3 view screen, it is simple.

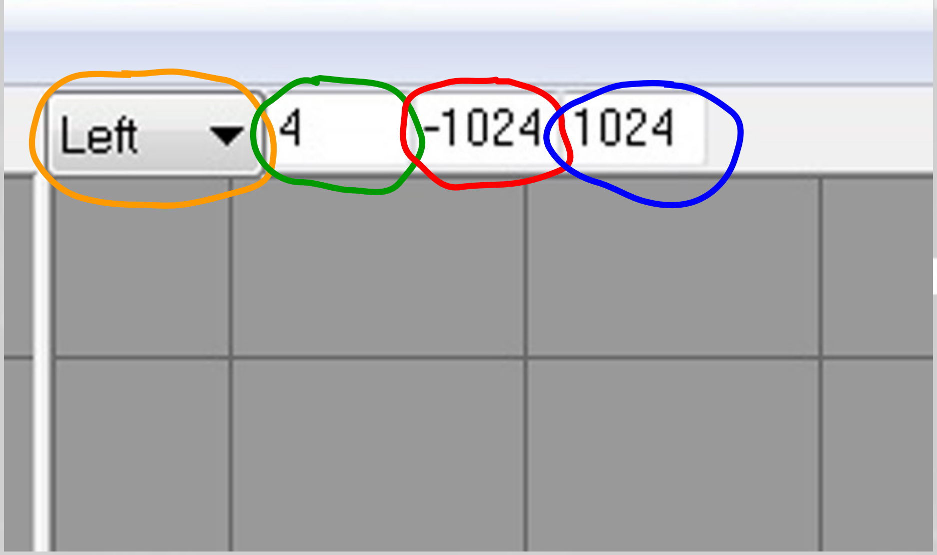
From the « **Top Text Menu** », choose (**Window**) then the option (**Viewports**) and **LMB** one one of the options. You should see 3 options. Simply choose one of them.

If you want to put the control « **Tool** » menu to the left or right, simply go to (**Windows**) then go to (**Control Panel**), after **LMB** one one of the two options.

To "**Maximize**" one of the 4 windows with your mouse, you simply point one of the four windows. Then you do a (**RMB**). This make some windows popup with some options. The option at the bottom there is the word "**Maximize**", with your "**Left-Mouse-Button**" (**LMB**); you simply click on the word "**Maximize**". This results in maximizing the windows you have pointed to with your mouse. To make this window that has been maximized return to it's previous state, you simply again do a (**RMB**); then you choose the option "**Maximize**" that is quoted. It's like you would turn **On** or **Off** the "**Maximize**" option.

Show or Hide a Few Things

Also in the "**Top Text Menu**" in Milkshape3D, from the menu (**Window**), there are the options: "**Show Message**", "**Show Viewport**", "**Show Keyframer**". For the Futurepinball software I dont think the option (**Show Message**) and the option (**Show Keyframer**) is important for now. Clicking on one of these options can make it (**On** or **Off**). When the "**Message**" option is **On**, it makes a text zone appear where the software can write information. "**Keyframer**" is some sort of timeline for doing some animation. The option "**Viewport**" allows you to see some details of each window. It shows the (**Left**/**Right**/**Top**/**Bottom** or **3D**) window.



I have read on the web that the (**First**) option shows the state that the **Viewport** window is in.

Then the (**Second**) window is considered as the « **Magnify** or **Zoom** ».

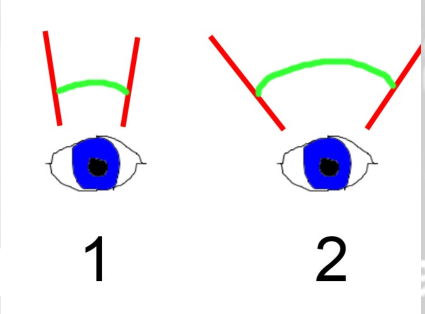
The (**Third**) is considered to be the number that is the **Closest Viewable Point**.

The (**Fourth**) is considered to be the number that is the **Farthest Viewable Point**.

You can change the "**Viewport**" by simply selecting the view of the object you want to see. In this image, you see the word (**Left**) for "**Left View**". You can also click with (**RMB**) in a window, choose (**Projection**) with the (**LMB**) to select a view option as previously told.

Field of View (FOV) and Zoom-In or Zoom-Out

I think the "**Field Of View**" is more commonly known as the (**FOV**). It is when you are in the "**3D View**". What some youtube videos explain is that in Milkshape3D the (**FOV**) is like a "**Camera**" that sees the 3D Viewport. The higher the (**Zoom** or **Magnify**) is, the more the camera "**Sees**".



I have created an image that should further explain the « **FOV** ». You can see that the eye (**1**) has the **Field of View** limited by the (**Red Lines**), and the « **Zoom** or **Magnify** » is the (**Green**). You can say that the (**Green**) is the « **Angle** » of the (**FOV**).

I'm sure you have guessed that the eye (**2**) the « **Angle** » of the (**FOV**) is wider. So it sees much more of the 3D world **Viewport**.

I hope this explains what is better about having a greater "**Angle**" of the (**Field of View**) in a 3D world.

"**Hint**" in each window viewport, you can (**Zoom-In** or **Zoom-Out**) with your mouse dynamically. Simply point with your mouse at a viewport, then click the (**LMB**) to select what viewport you want. After you "**Scroll**" with the (**Scroll MMB**), you'll notice that you will "**Zoom-In** or **Zoom-Out**" of the window viewport that you want.

Some text on the web says that by keeping the keyboard button (**Shift Key**) pressed, after (**Scrolling**) with the "**Scroll MMB**", you can (**Zoom-In** or **Zoom-Out**) more faster on the viewport you have chosen.

Shifting One of the Viewports

It's possible that when you **Zoom-In** or **Zoom-Out** that you "**dont see the model**" that you want. What to do then?

You can select one of the viewport, by clicking the (**LMB**) to select the viewport you want. Then keep the (**CTRL**) button pressed on your keyboard, then click and hold the (**LMB**) to simply "**Drag**" your viewport to see what you want. Dont hesitate to try it if you want and simply "**Drag**" with the keyboard button and your mouse button.

Doing so it's like you would transform the mouse cursor of one of the viewports. Like you would transform it to a "**hand**" that can "**Drag**" the viewport scene as you want. You can drag-it from (**Left** to **Right**) also from (**Top** to **Bottom**), as briefly as you want.

Rotating, Zooming, Shifting in the 3D Viewport

To "**Rotate**", first simply click and hold with the (**LMB**) on the scene "**3D Viewport**", after you simply move your mouse. You'll notice that the 3D scene is "**Rotating**".

Dont worry about"**Zooming**". Once again choose the 3D viewport, and then keep the (**Shift Key**) and (**LMB**) pressed. When you keep the (**LMB**) **pressed** after you **Drag** your mouse cursor **Vertically** to the "**Top**" or to the "**Bottom**". You'll notice that it will (**Zoom-In or Zoom-Out**) of the 3D viewport scene. You can also use the (**Scroll-MMB**) as you want.

To "**Shift**" the 3D scene viewport is also simple. **Keep** the (**CTRL**) button **Pressed** on your keyboard and then **Keep** the (**LMB**) **Pressed** on your mouse; then move your mouse. You'll notice that it will "**Shift**" your 3D scene.

You can also "**Reset View**" by simply pointing your mouse in one of the 4 scenes, then (**RMB**) after choose the word "**Reset View**" with the (**LMB**). This should "**Reset the View**" to it's default.

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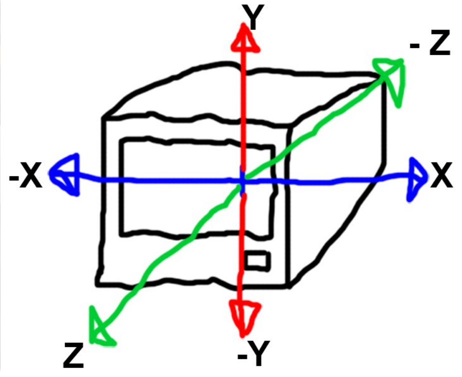
Getting Ready to Play

The 3D World (X,Y,Z)

Here I have created an image of what would be the 3D world in a software such as Milkshape3D.



An old computer screen.

Imagine that the absolute center of the 3D world, would be the absolute center of an old computer screen. The coordinate would be (X = 0 , Y = 0 , Z = 0).

As in Milkshape3D, you see some colored lines by default (Yellow, Magenta, Cyan). Please do not confuse the center of the 3D world with the « Center of Gravity » (COG) of a 3D model.

The center of the 3D world is always the same, but the center of a 3D model is the center of the object. When you place the 3D model at another location, the center coordinates of the 3D model change also.

In the image here, the absolute center would be the place that the « **Green** & **Red** & **Blue** » lines reach a common place.

Now you know that the absolute center is (**0,0,0**). In the image on this page, the "**Horizontal**" line is the (**X**), the "**Vertical**" line is the (**Y**); and the "**Back to Front**" line is the (**Z**). Notice that on the (**X**) the more you go to the "**Left**" of the absolute center; then the (**X** is **Negative**). For the (**Y**) the more you go "**Down**" from the absolute center, the more the (**Y** is **Negative**). I'm sure you have notice also in the image if i'm correct, what is the (**Negative Z**).

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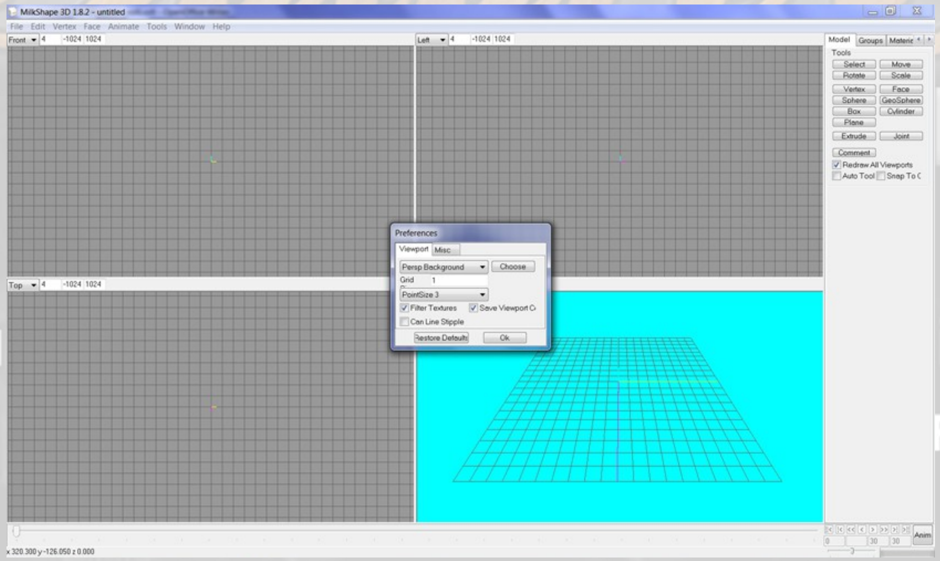
Changing Some Colors

In Milkshape3D, you have the possibility to change the colors of many components. It might be useful for you to personalize things. This is done simply by going to the top text menu "**File**" after the word "**Preferences**".



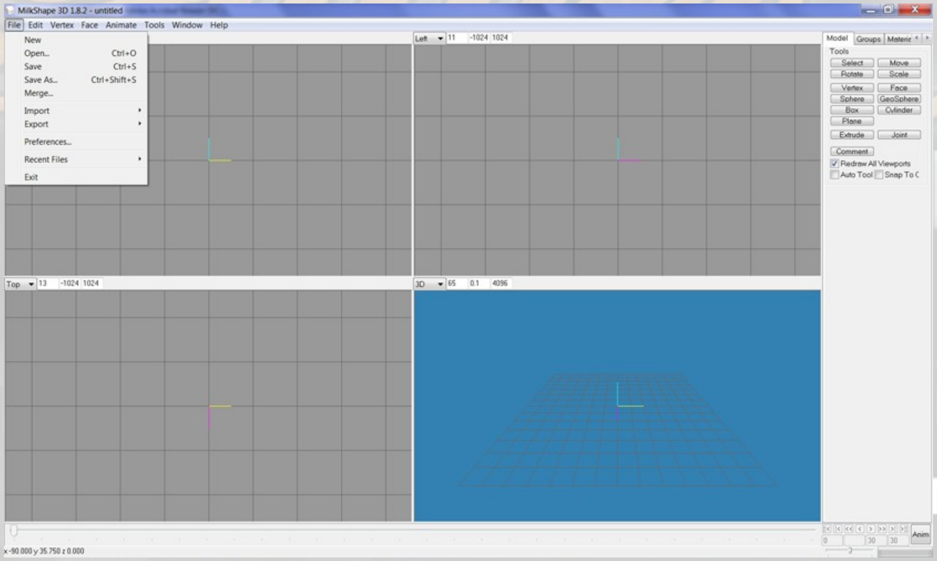
There are many options to choose. The option « **Persp Background** » is the (3D view zone). Once this option is selected, you can click on the button next beside « **Choose** ». This will then open a new window with the option to choose a color.

When you choose a corresponding window and click on the color, the color should change. You can also choose one of these options (**X Axis** or **Y Axis** or **Z Axis**), and then choose a color. This will make one of the « **Axis** » change it's color.

To set things back to the default, go to the top text menu "**File**" then select the option "**Preferences**". You should also notice the option button that is writen on "**Restore Defaults**". The Milkshape3D version used here is 1.8.2 and it's possible that latest version has other ways for this. I suggest that you save your things before doing so. Then click on the "**Restore Defaults**" button, after simply closing the Milkshape3D software and re-open it to be sure it will start with the default options.

The Text Menu File

Here is an image of the text menu "**File**". There are diverse options from the top text menu "**File**" described here:



« **New** » is simply for creating a new (**ms3d file**).
« **Open** » is to open a (**ms3d file**).
« **Save & Save As** » to save your (**ms3d file**).

« **Merge** » is special. For this you must first open an (**ms3d file**), then click on the option « **Merge** ». Then it will ask you to open an other (**ms3d file**). It will result in two (**ms3d files**) that are « **Merged Together** ».

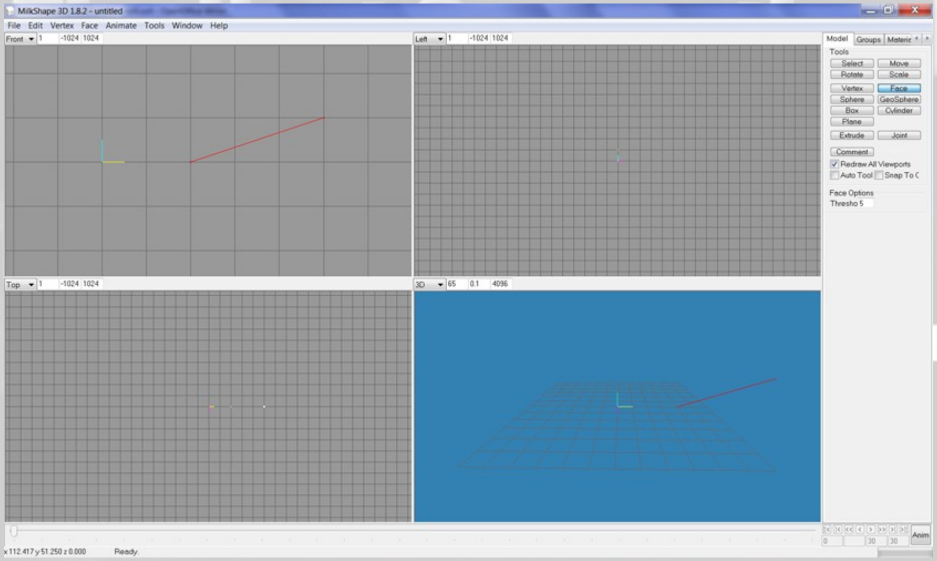
« **Import** » opens different 3D file types.
« **Export** » is to export your 3D model into another file type.

« **Preferences** » allows you to choose some extra options. Note that it has the button for (**Restore Defaults**). I suggest that you save first your project. If you want to (**Restore**) Milkshape3D, then simply close the software and open it again. So it should open with the (**Defaults**).

« **Recent Files** » is simply some little history of the last recent files you have opened

Creating Some Dot's and Joining Them Together

"**Dot's**", what about them? Well dot's are simply some (**points**) in the 3D world that when **connected** form some **face**. You need at **least** 2 dots to make an **Edge**, and **3 dots** to make a **Face** as a "**triangle**". 3D models have a lots of dot's, these dot's are better known as a "**Vertex**". The line that connects two vertex's are known as an "**Edge**". In a 3D world, these "**Dot's**" better known as (**Vertex**) also have there own "**Numbers**". These numbers are simply the position of the "**Vertex**" in the 3D world using the (**Axis X, Y, Z**). "**Note**" that when you move your mouse on the grid on the (**Bottom Left**), you will see "**Numbers**" that indicate the (**Position**) of your mouse cursor.

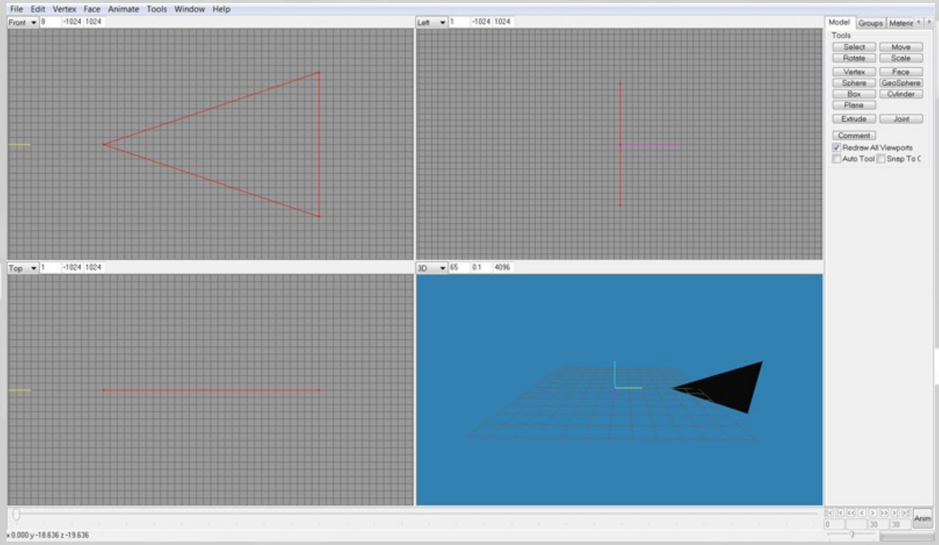


First (**LMB**) on the « **Front View Zone** » if you want. Then choose the (**Tab**) called « **Model** ». You should notice the position of your cursor is written at the bottom of the window. When you move the cursor, the numbers (**X , Y , Z**) change. While still in the « **Model** » tab, you can click on the button (**Vertex**). Then position your cursor on your scene and simply do a (**LMB**). This will create a « **Vertex** » or a (**Point**). Now try to add an other point. To link them, simply click the (**Select**) button and then click where there is nothing. By default, the dots should be white when not selected. Then choose the button (**Face**) in the « **Model** » . After you simply (**LMB**) on the first « **Vertex** » while keeping the (**Alt**) pressed, then click with (**LMB**) on the next « **Vertex** ». This should make a line. The image I've done here shows two vertexs connected.

Note that sometimes to "**Select**" a (**Vertex**) in the options control panel, you should see the option to choose "**Select Options**" and the button (**Vertex**). Don't worry about experimenting by linking two vertexs or more. You can try to select also more than one vertex with the (**Shift Key**) or you can create some boundary box.

Creating a Triangle by Joining 3 Dot's

As in the previous page, we will create 3 dot's and link them to create a "**Face**" that will be a (**Triangle**). In the "**Model**" tab of Milkshape3D, you click on the (**Vertex**) button with your "**LMB**". Then you simply put the points where you want. Then click on the (**Face**) button in the same tab. Then you simply indicate with your "**LMB**" what vertex point you want to link with the (**Alt Key**) pressed.



Here is an image of a triangle I've created.

Important Notes :

The option « **Redraw all Viewport** », should be always checked. This will make the changes you make appear in all scenes.

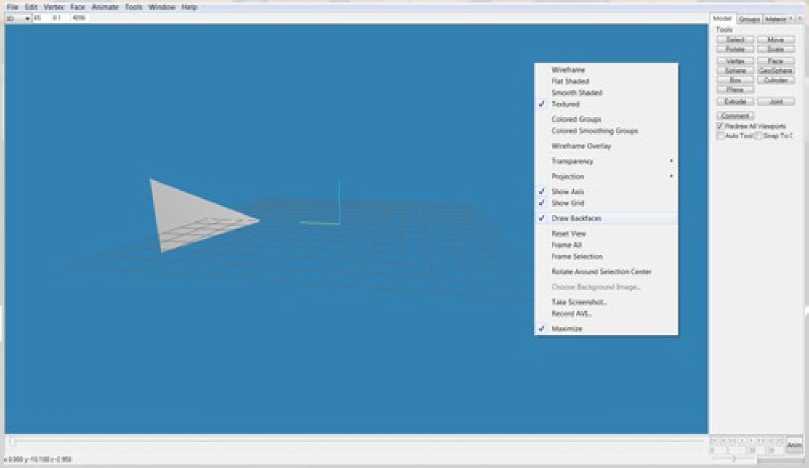
When checked, the option « **Auto Tool** » means that it will automaticly go back to the (**Select**) mode for each completed action. This should be unchecked.

The option « **Snap to Grid** » means that each time you insert a (**Vertex**), it goes directly to a close intersection of your grid. For more liberty, you can leave it unchecked; but for first time, you should check it.

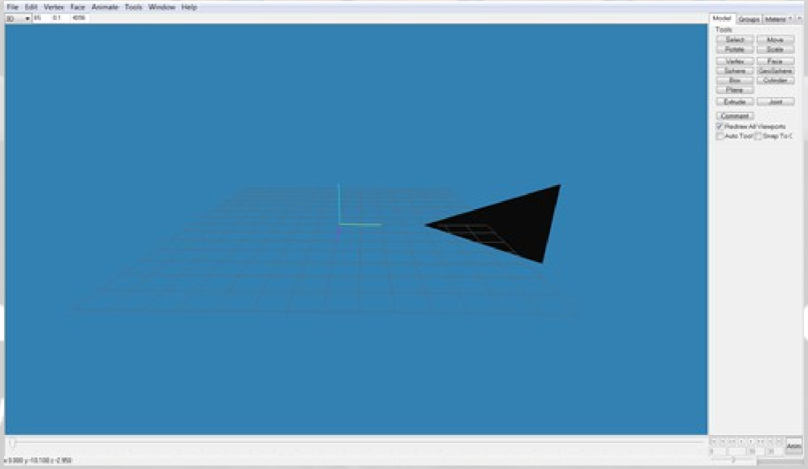
When the button « **Face** » has been clicked, the options « **Face Option** » and (**Threshold**) appear. This **Number** indicates the maximum amount of pixels within which the user must click in order to select the (**Vertex**). By default the number should be **5**.

Draw Backface Option "Important"

I think it is "**Very Important**" on the model that you have created that you leave the option that is called (**Draw Backface**) checked. Why? Here are two images of the same triangle. By default, the "**Backface**" that is drawn is colored in (**Black**).



Here you see in the **3D View**, when you press on the (**RMB**) some options; one that is writen « **Draw BackFace** ».



This is the same triangle, but you can see the back of it. This is because the option « **Draw Backface** » is checked.

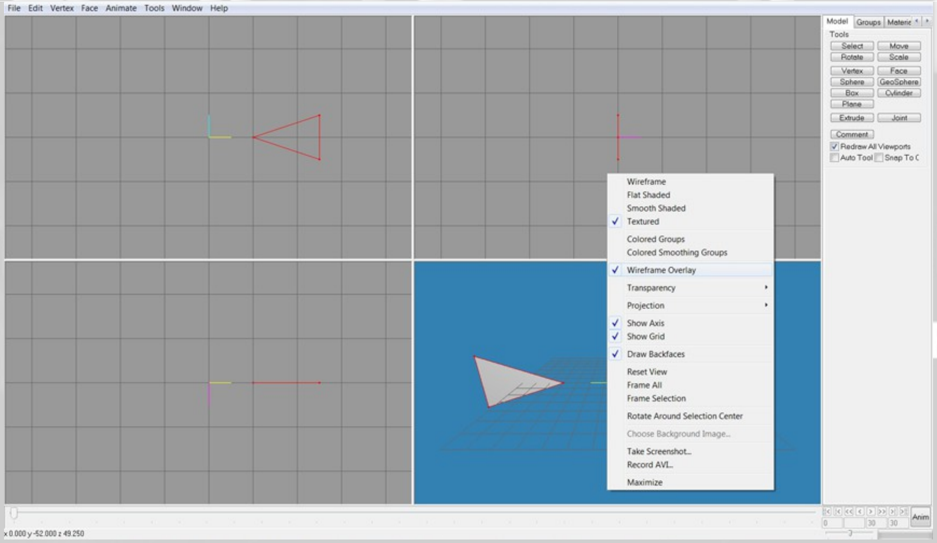
In Futurepinball, the "**Backface**" is (**Invisible**), and i can even say that the ball can (**Pass Trough**) the "**Backface**".

So suppose that you create a 3D model to put into FP. I do believe that the ball will only collide with the face that is the "**Front Face**", and not the "**Back Face**". That's why i do believe also, it is important to let you know. You can experiment to see if the FP ball will collide with your 3D model or not.

How to Move a Vertex in the 3D View Scene

I was wandering how to move a "**Vertex**" or if you would prefer a (**Point**)? So I've done some web searchs to find out how. There might be others ways to do so, but here is the way I've read.

With the "**3D View Scene**" pointed and selected, you need to perform a (**RMB**) click to make a menu apear. There is an option that you must put a "**Check Mark**" beside that is identified as (**Wireframe Overlay**). This will toggle the option (**On** or **Off**) for "**Wireframe Overlay**". Here is an image of my triangle ive done and that has (**Checked Wireframe Overlay**).



While still in the « **3D View Scene** », you (**Select Vertex**) and keep the (**ALT**) pressed on your keyboard. Then with your (**LMB**) you simply click on some « **Vertex** or **Point** ». You can (**Select**) also multiple (**Points**) by adding an other key pressed that is « **Shift** ». So I can say to use (**Alt + Shift**) to select the points you want.

Then from the tab that is called « **Model** », you click with your mouse the button (**Move**). You should see the (**Vertex Colored**) from one of the « **Other View** » that you you have selected. Drag the point you want with your (**LMB**) .

When the (**Move**) button is clicked, you can also go to the option that is named (**Move Options**). You should see some « **Numbers** » and some « **X, Y, Z, with Options** »; then the (**Move**) button beside. Just experiment with it and have fun.

To deselect, click the button named (**Select**). Then with your (**LMB**), simply click where there is nothing.

Future Pinball
The Next Generation in Pinball Simulation
Futurepinball, Gopinball, Pinsimdb, Milkshape3D, FPMeditor
By: S.Favron

Snap the Vertex to the Grid

I have tryed the option that is called "**Snap to Grid**". I was wandering if I could move the (**Vertex**) and snap it to the grid. I've read on the web and most comments said, that what ever tool of Milkshape3D has been clicked; in the tab called (**Model**) you should see some options. One of these is a square that you can "**Check Mark**" that is listed just beside (**Snap to Grid**).

When you move your "**Vertex**", the movement is (**Snapping to the grid**). You can see that it has snapped to the grid only when "**Zooming a Lot**".

Moving a Vertex With or Without Limits

Note that when moving a "**Vertex**" you can move it with (**No Limitations**) or (**Some Limitations**). How do you make limitations when moving a "**Vertex**"? To do this, click into the tab called (**Model**) on the button "**Move**" with the (**LMB**) . You should see some "**X , Y , Z**" buttons.

The "**X , Y , Z**" buttons are "**Activated**" when (**Colored**) by default in blue. There are (**Movement Limitations**) when the "**X , Y , Z**" buttons are (**Not Colored**) or by default color "**Grey**" when not activated. It's like giving some "**Movement Permissions**" or not.

As an example, suppose that you want to move a 3d model on the (**X, Y Axis**), but not on the (**Z Axis**). For this, you would set the buttons (**X, Y Axis**) colored in blue, and the (**Z Axis**) colored in grey.

I suggest that you import some 3d model or create your own Milkshape3d file (**ms3d**), and try to move it with the axis that is (**X** or **Y** or **Z**) by simply turning the button to "**On**" in (**Blue**) or to "**Off**" in (**Grey**) by default.

Getting Ready to Play

Moving a Vertex using the X , Y , Z Box's

I was wandering how to put the "**Vertex Point**" to an (**Exact Position**) on the grid or (**Related**) to it's current position. So I've again done some searches and looked at some videos on youtube and others. So I've done some experimentation and you also can do these experiments.

The things I've read and the things I've done should be simple for you to do also. I've first put a "**Vertex Point**" in one of the scenes, by choosing the scene and selecting my "**Vertex**" I've clicked on with the (**LMB**). If you only have "**A Vertex Point**", to select this (**Point**) you open the tab that is called "**Model**"; you then click on the button named (**Select**). Remember there are "**Select Options**" below. You should see the "**Select Options Buttons**" that is named (**Vertex**).

You click on "**Vertex**" this should turn blue in color by default, meaning it is (**Activated**). With your mouse cursor you can make a boundary box. This is done by keeping the (**LMB**) pressed, then you "**Drag**" the mouse to form a rectangle. This should select the "**Vertex**" you want in your boundary box zone.

Futurepinball, Gopinball, Pinsimdb, Milkshape3D, FPMeditor
By: S.Favron

If you want to select "**Multiple Vertexes**", you can also create a boundary box that covers the (**Vertex Points Choosen**). If there is already "**One Vertex Selected**" and you want to "**Add Another**", then you simply create a boundary box zone; or keep the (**Shift Key**) pressed after clicking with the (**LMB**) on the vertex points you want.

Now in the "**Move Options**" there are some choices of rectangles. If you choose the "**Relative Option**" below the (**X,Y,Z**), then you type numbers into the boxes. It will indicate that it is calculating the "**Current Position**" of the (**Vertex**) and give a position that is "**Relative**" by pressing the (**Move**) button just beside. **But** if you choose the "**Absolute Option**", after you type some numbers, it will then put the (**Vertex**) not related to it's current position; but will "**Move**" the (**Vertex**) related to the "**3D World Grid**". By performing some experimentation and "**Zooming the Grid**", you should notice the difference between (**Relative**) and (**Absolute**).

Moving an Edge

I hope that so far this free guide will help you. I'm experimenting with this software, so it's quite possible that the pages don't follow correctly; as some first guide about modeling with Milkshape3D that start with the basics and progress through the pages. That's why ive created some chapter sections at the start, this to go directly to the subject you want; that could be related to Milkshape3D and others.

Now because I don't know if the reader has read previous pages related to "**Vertex**". We will create in Milkshape3D (**Two Vertex Points**). From the tab that is called "**Model**", you click on the button (**Vertex**). You then (**LMB**) on one of the scenes with the cursor of your mouse and create a minimum of two vertex. You then click on the button named "**Face**" to link the "**Vertex Points**" by clicking them. You should now have at least (**2 Vertex Points**). This create an invisible "**Edge**" that are linked to the vertex points. Remember 3 vertex points linked create a face.

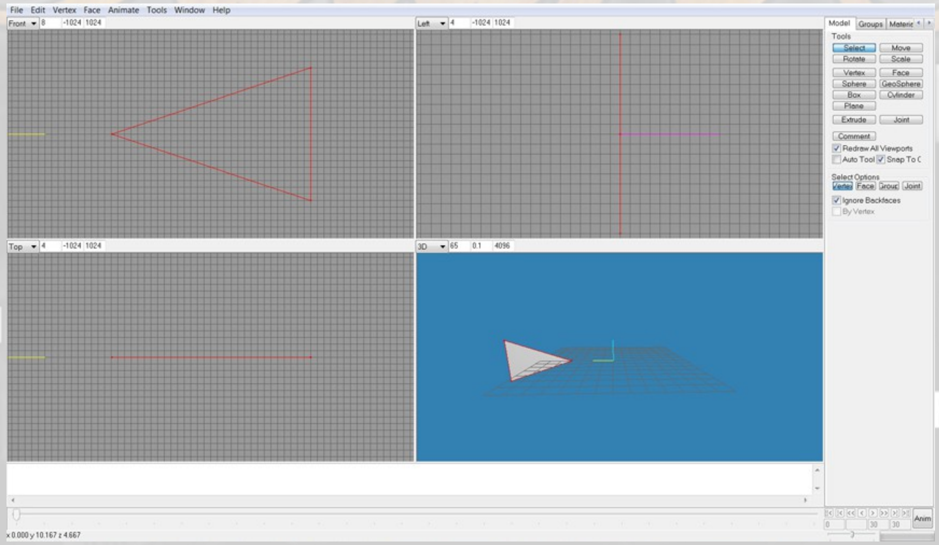
In order to make an (**Edge**) move, you must at first select an "**Edge**" by the vertex points. For this you simply click on the button named"**Select**" and remember the (**Select Option**) of the "**Vertex**" that is choosen. You then "**Select**" two linked (**Vertex Points**) to move "**One Edge**". In order to do so, you keep the key (**Shift**) pressed and click on the"**Vertex Points**" that you want. You should notice that the "**Vertex Points**" choosen will change (**Color**).

With the button of Milkshape3D called "**Move**", you can also select (**Multiple Vertex Points**) that form "**Edges**". By moving these (**Vertex Points Related**), you can also experiment and move the "**Edge**" that is connected to the vertex points.

Well I hope it was easy for you to learn how to move an edge?

Moving a Face

This is related to the subject about creating a triangle with 3 vertex points. If you did not know how to create some triangle from 3 vertex points, then you should read about it in this guide; before moving a face that is a triangle.



For selecting the « **Face** », the (**Select**) button must be clicked. There are 2 ways to select a face.

1 – By the « **Vertex Points** » that form the face, previously told in how to select (**Vertex Points**).

2 – In the « **Select Options** », you click on the button named (**Face**). You then click on the « **Face you Want** » or you can simply do a little boundary box (**Within the Face**).

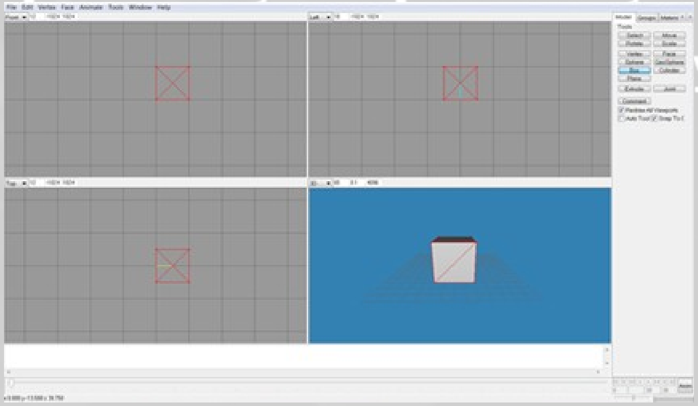
« **Notes** ». If you are selecting a (**Back Face**), sometimes it cant be selected. This is because the option « **Ignore Backface** » must be (**Unchecked**). You can try it if you want, you should notice.

This is an example of "**Not Ignore Backface**" when you are in the (**Front View**) or other view. If you have a cube and select a vertex point or edge or face and then you perform a (**Selection**), it will then select also the vertex point or edge or face that is (**Behind It**).

Modifying A Cube

(**Scaling**) in 3D is changing an "**Edge**" or "**Face**" so it is (**Bigger** or **Smaller**). I'm not an expert and there are many things said on the web about (**Scaling**). Some would scale an edge and the scaling would have different results. For example, suppose a line between "**Two Vertex Points**" were named (**1 & 2**). The user may want the "**Edge stay Fixed**"; and have only (**One End**) get longer. Some people might want the "**Edge to stay Fixed**", and when scaling (**Both Ends**) get longer. There is much more in 3D, because of the "**Axis X, Axis Y, Axis Z**".

From here we will now have different exercises about modeling and we will do it together. When I say together, it's because I will tell you the things I do. So you can try them also and by trying them you should more understand modeling in Milkshape3D because you will see the results in Milkshape3D. As I said I'm not an expert, but these exercises are things where I've experimented so you can also experiment.

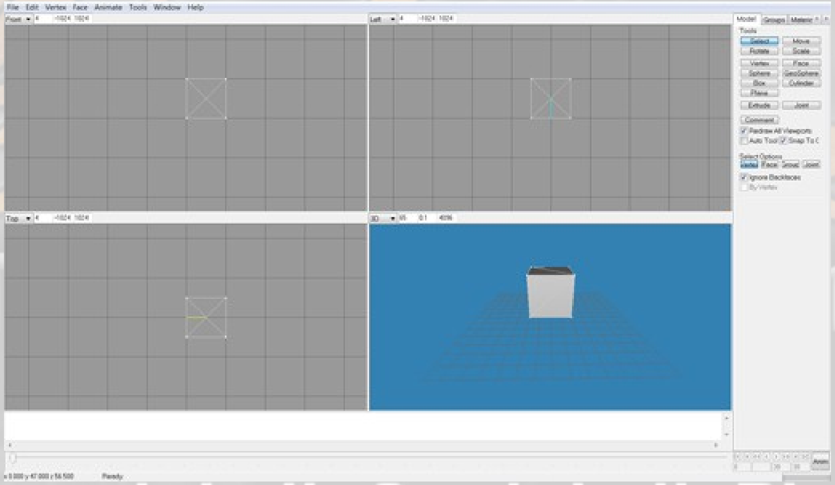


Creating a box : From the tab « **Model** », you click on the button (**Box**). The options (**Redraw all & Snap to Grid**) should have a check mark so it will snap to the grid. Then with your (**LMB**) in one of the « **Scene View** », you simply create a box by « **Draging your Mouse** » and keeping the (**LMB**) pressed while you drag. Then once your cube or box is done, you will then save your project from the top text menu named « **File** ». I suggest you use « **Save As** » to save it into an other name for the changes you make. You can give the name if you want (**mybox**) or (**mycube**).

With this "**Box**" we will do some transformations. Like (**Moving a Vertex**), (**Moving an Edge**), (**Moving a Face**), (**Scaling**) and more. These will be on the next few pages.

The Next Generation In Pinball Simulation
Futurepinball, Gopinball, Pinsimdb, Milkshape3D, FPMeditor
By: S.Favron
Getting Ready to Play

Moving a Vertex of a Cube



To select a vertex in the tab « **Model** », we will first click on the button (**Select**). The select option is « **Vertex** ». Next you will simply click with your (**LMB**) where there is a « **Vertex Point** ». This is a way to select a vertex point.

The options (**Redraw All**) and (**Snap to Grid**), should be check marked. We will experiment with two « **Select Options** ». The option button (**Vertex**) should be clicked.

The two experiments involve the « **Check Mark** » of the option (**Ignore Backface**). We will try it « **Checked** » and also « **Not Checked** ». to see the difference.

Place a "**Check Mark**" on the option (**Ignore Backface**). Now I suppose that you have not created some 3D box. So with your (**LMB**) you will create a boundary box by "**Dragging the Mouse**" as the steps previously told. Try to select (**One Vertex Point**) on a "**Corner**" of the box. Then click on the button (**Move**). Then "**Drag your Mouse**" which will move the (**Vertex Point**). You will then undo your movement by pressing the button on your keyboard (**CTRL + Z**). You can also go to the top text menu named (**Edit**) then the option (**Undo**). If you have saved your cube before the modifications, you can also "**Re-Open**" your cube made before. It should maybe ask if you want that your current 3D model to (**Save Over**), you can say to "**Replace**"; or you choose (**No**) to not replace.

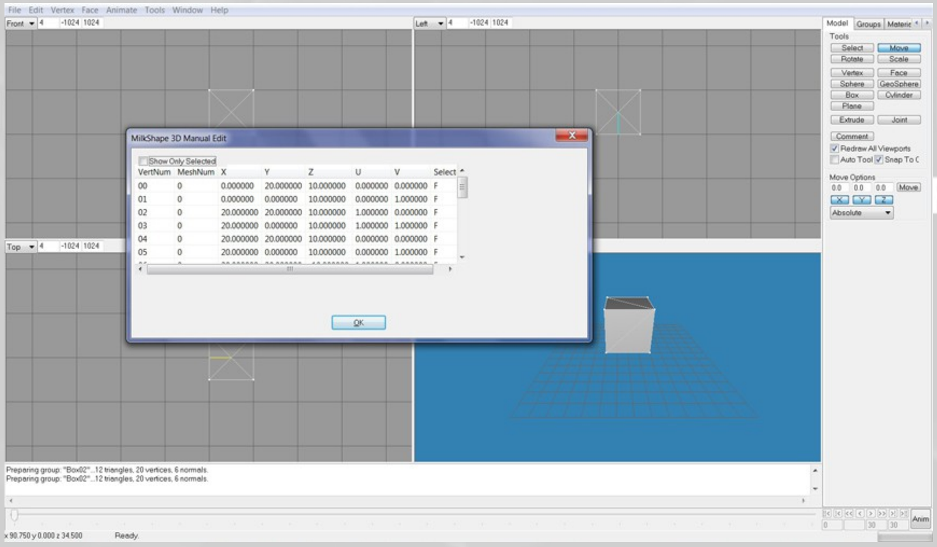
Leave option (**Ignore Backface**) "**Unchecked**". Again choose (**One**) corner vertex point. Then (**Move**) the vertex. Because "**Ignore Backface**" is (**Unchecked**), it selects also what is "**Under**" the vertex. So if the (**Top Vertex**) is selected, it will also select the (**Bottom Vertex**). Briefly, it selects also what is opposed to the "**Scene View Choosed**". Just experiment.

Moving Two Vertex's of a Cube

If you remember on one of the previous pages, I've shown you how to move an "**Edge**" by selecting (**Two Vertex Points**). Once again you will from the "**Box**" you have created, select (**Two Vertex Points**). With your mouse, choose the option "**Select Vertex**" and (**Drag your Mouse**) making some boundary box to select "**Two Vertex Points**". Then (**Move**) and experiment with the select options "**Ignore Backface**" and "**Not Ignore Backface**".

Manually Editing a Vertex Point

Note that when there is (**Mostly a Face**) formed of some "**Vertex Points**", it is possible to manually indicate the position in the 3D world of each vertex point. When you go to the text menu named "**Vertex**", then you choose the option that is named (**Manual Edit**) where there is the keyboard shortcut (**CTRL + Shift + E**). You should notice a window that pops up.



MilkShape 3D Manual Edit

☐ Show Only Selected

VertNum	MeshNum	X	Y	Z	U	V	Select
00	0	0.000000	20.000000	10.000000	0.000000	0.000000	F
01	0	0.000000	0.000000	10.000000	0.000000	1.000000	F
02	0	20.000000	20.000000	10.000000	1.000000	0.000000	F
03	0	20.000000	0.000000	10.000000	1.000000	1.000000	F
04	0	20.000000	20.000000	10.000000	0.000000	0.000000	F
05	0	20.000000	0.000000	10.000000	0.000000	1.000000	F

OK

```
Preparing group: "Box02"...12 triangles, 20 vertices, 6 normals.
Preparing group: "Box02"...12 triangles, 20 vertices, 6 normals.
```

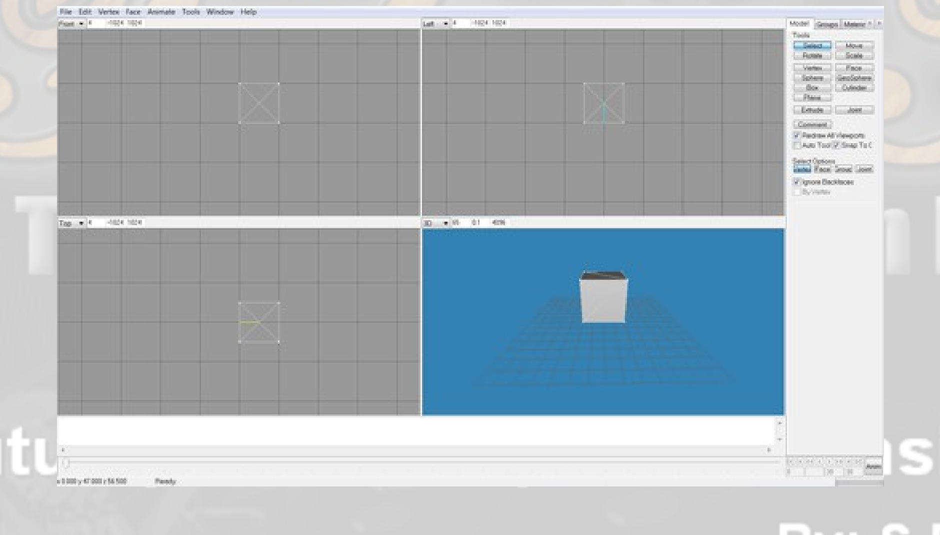
x 90.750 y 0.000 z 34.500 Ready.

« **VertNum** » is the (**Vertex Number**).
« **MeshNum** » is the (**Mesh Number**).
« **X, Y, Z** » are the (**Vertex Coordinates**).
« **U** » and « **V** » I'm not sure what it is. I must study more about it.

If the (**Vertex is Choosed**), « **Select** » the letter is « **T** » for (**True Selected**). If the letter « **F** » selected, the vertex is (**Not Selected**) so « **F** » is for (**False**).

Simply try to move the vertex as stated previously and look in the « **Manual Edit** » to see the vertex changes and note the differences. You can change things written in the box and press (**Ok**) to experiment.

Moving the Face of a Cube



To select a « **Face** » you choose (**Select**) and in the « **Select Options** »; you click on the button writen (**Face**). You then try to create some « **Interior Boundary Box** » of the face, by (**Clicking and Draging**) with your mouse into the face. This should select your face.

To move your « **Face** » that is (**Selected**), from the tab writen (**Model**), you click on the button named « **Move** » then you move the face as you want.

Try to simply « **Move** » the (**Face**) as you want in one of the « **Scene Views**» or try the (**X , Y , Z**) and move button.

By: S.Favron

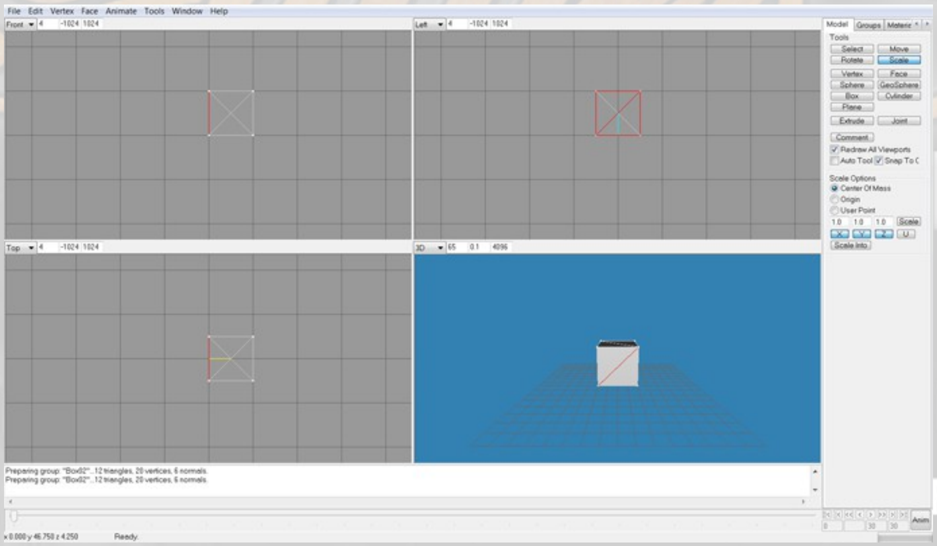
I Suggest that you experiment with the (**Select Options**) named "**Ignore Backfaces**". You can also try to create as identified previously some "**Triangle**" or "**3D Model**" and move it's face, or vertex point or edge in one of the scene "**With** or **Without**" the option writen (**Ignore Backfaces**).

By (**Selecting** or **Unselecting**) the "**Face**", you can do some visualisations. Go to the (**Top Text Menu**) and select the option named "**Vertex**" after the option writen (**Manual Edit**) just to help you notice the differences. "**Note**" the changes that you have made in case you would like to experiment by manually editing the points.

Simply "**Have Fun**" by doing some experiements and take some (**Notes**). Again "**See the Differences**" of your choices.

Scaling the Face of a Cube

I won't tell you how to select a face because I think you should know how from the previous pages.



```
Preparing group: "Box02"...12 triangles, 20 vertices, 6 normals.
Preparing group: "Box02"...12 triangles, 20 vertices, 6 normals.
```

x 0.000 y 46.750 z 4.250 Ready.

Scaling : From the tab writen « **Model** », click on the button named (**Scale**).

Then click on the « **Scale Options** ». I mostly suggest the option writen (**Center of Mass**) which is the « **Center** » of what you have selected.

You can also try the other « **Scale Options** », like the one named (**Origin**).

You will notice 3 rectangles where you can type some « **Numbers** » and a button beside (**Scale**). You should notice that when the numbers are greater than (**1.0**), it's getting bigger. When it is less then (**1.0**), it is getting smaller.

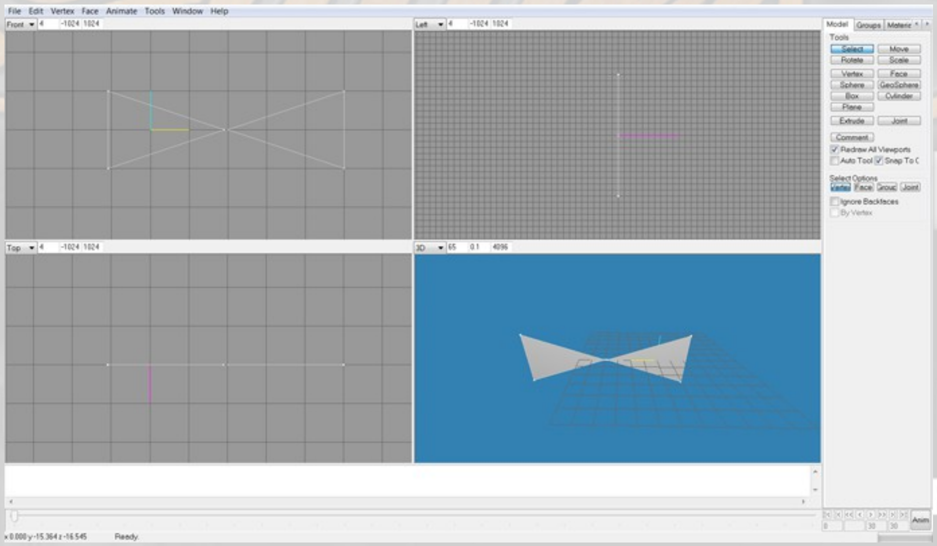
Dont forget the « **Scale Button** » that is just beside the numbers.

Don't worry about experimenting. I just want to assure you and make your self comfortable by performing some experiments. Also try "**Enabling** or **Disabling**" some buttons as (**X , Y , Z**).

(**Notes**): If you type a "**Negative Number**" on the (**Face Selected**) like replace a (**1.0**) with a (**-1.0**) on a "**Triangle**", it will then perform a "**Mirror Effect Position**". Try it if you want.

Mirror of a Triangle

Here you will simply create an all new triangle again but we will "**Mirror It**" and "**Move It**".



First create your triangle. Then you select all your triangle. Uncheck the option « **Ignore Backfaces** ».

Now click on the button named « **Scale** » then below it (**Scale Options**) will appear. You select the option named « **Center of Mass** ». The button (**X , Y , Z**) should be « **Enabled** » by being by default in (**Blue Color**).

Replace the rectangles that have the (**1.0**) numbers with the (**-1.0**). After you click the button beside named « **Scale** », you should notice that your triangle have (**Flipped**).

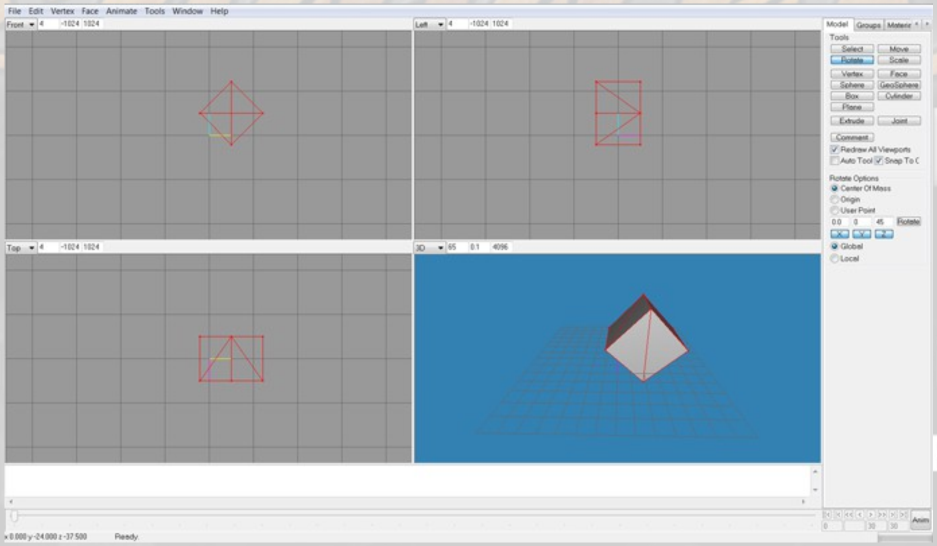
For the next experiment, go to the « **Top Text Menu** » named (**Edit**) that is after the text « **Duplicate Selection** ». Then try to (**Mirror**) your « **Duplicated Triangle** ».

Next, try to (**Move**) one of the « **Triangles**» with the option (**Ignore Backfaces**) unchecked. You can also try to (**Scale**) the triangle that you want by correctly selecting it.

(**Notes**): While in the "**3D Scene View**", you can press the (**RMB**) to see some options. There is an option named "**Draw Backfaces**". When it is (**Unchecked**) and you rotate your 3D scene, the "**Faces Seen**" of your 3D model should be the one that can be (**Texturized**).

Rotating a Cube

I have shown you how to "**Move**" an (**Edge**) or (**Face**). I have also shown you how to "**Scale**" a (**Face**) and how to "**Mirror**" a (**Face**). The next thing I wandered how to do is how to "**Rotate**".



You simply create a cube the way you want. Then you « **Select All** » your 3D cube model.

Click on the button « **Rotate** ». I dont know what the (**Rotate Options**) « **Global** » or « **Local** » do,but I have noticed there are 2 ways to rotate things; if i'm correct. As said i'm not an expert and it is a good thing. Because maybe i'll create later other easy books; so things to help you more.

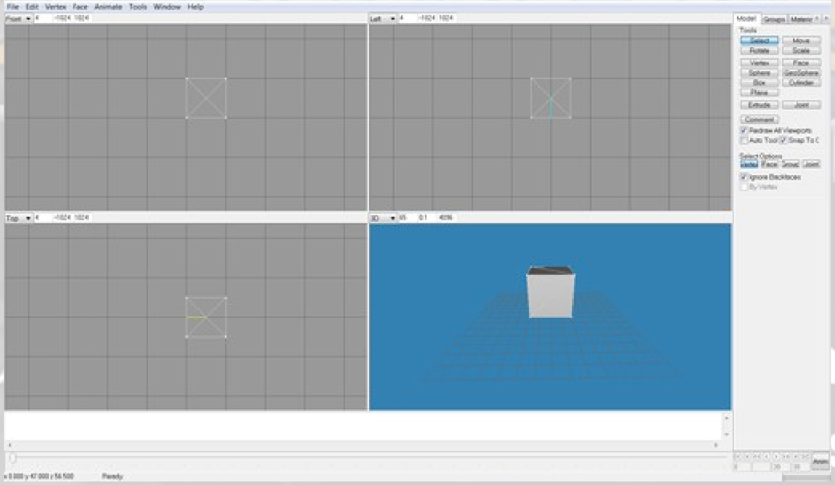
Option 1 : When you select the « **Rotate Option** » named (**Center of Mass**), it calculates the « **Absolute Center** » of your (**3D Model**). You can type some (**Numbers**) on the « **Rectangles** ». The numbers that you can enter are the « **Angles** » or your rotation that is on the (**Axis X , Axis Y, Axis Z**).

Option 2 : When you select the « **Rotate Option** » named (**Origin**), it calculates the (**Absolute Center**) of all the « **3D World** » related to your 3D model. Try both type of rotations and experiment things.

"**Note**": When rotating an (**Edge**), you select the "**Two Vertex Points**" that form the (**Edge**). Experiment as you want.

Putting a Face in Front or in Back

There might be many ways that I dont know about placing a face of a 3d model in front or in back. But the way I have found by watching some online video tutorials and reading some text is quite simple.



You will simply create a cube at first. Then (**Select**) the button « **Select Options** » and choose the button (**Face**). Also « **Uncheck** » the option (**Ignore Backfaces**). You can try it later with the option (**Ignore Backfaces**) checked just to experiment.

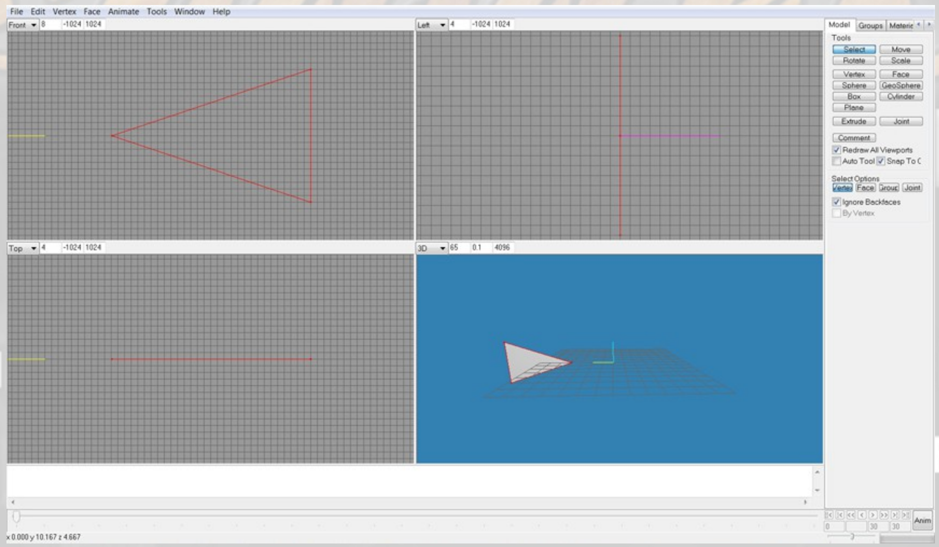
Once the face that you want is selected, you can go to the « **Top Text Menu** » that is named (**Face**). Then select the option from it named « **Reverse Vertex Order** ». This will make the (**Vertex Points Inversed**). Because the « **Vertex Points** » are related and forms a (**Face**), reversing will also « **Reverse the Face** ».

Note that a « **Face** » can not be (**Reversed**) if it doesn't exist. Also the option « **Draw Backfaces** » will make some faces visible or not. The face can be visible in front and can be invisible if it is the backface.

It is better to use the option « **Face to Front**, because it ensure that the face is at front.

Subdividing a Face and Dividing an Edge

I think the next thing that would be important for you to know is how to divide a face.



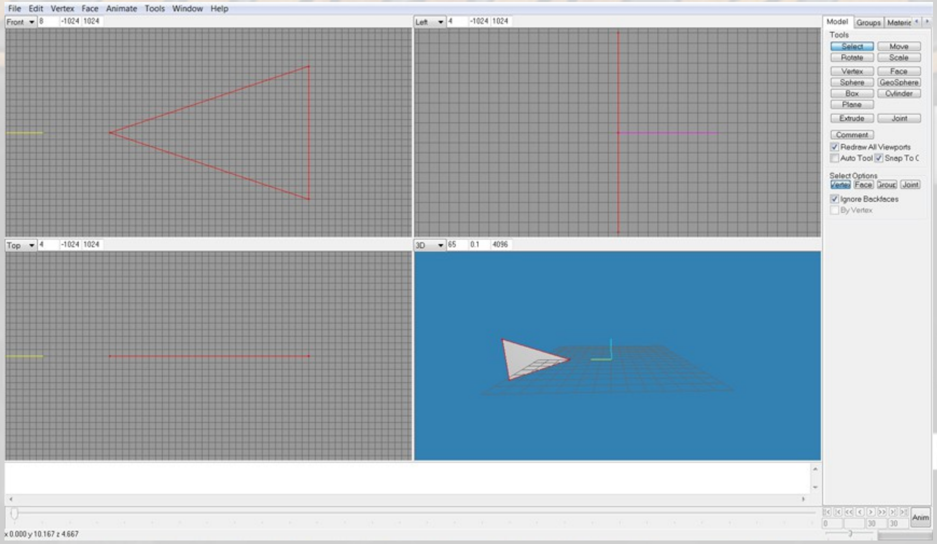
You will first create a triangle and then select the face of the triangle.

From the « **Top Text Menu** », select the option (**Face**). You should then try the options named « **Subdivide 2** », « **Subdivide 3** » and « **Subdivide 4** ». You will notice that your face is divided.

You can also divide a face by simply selecting which « **Vertex Points** » that you want to subdivide. Simply select with the select option « **Vertex** » and choose the (**Two Vertex Points**) forming an « **Edge** » that you want. Then from the « **Top Text Menu** », selecct (**Vertex**) then there is the option « **Divide Edge** ». You should notice that the face is divided and forms a vertex point in the middle of the edge.

Creating a Face by Adding one Vertex to a Triangle

This exercise will help you join a vertex point to a face such as a triangle.



Once again you will create a triangle and it's face by joining the vertex points together.

But what if you want to simply add « **One Vertex Point** » and join this vertex points to (**Two Others Vertex Points**) of the triangle face.

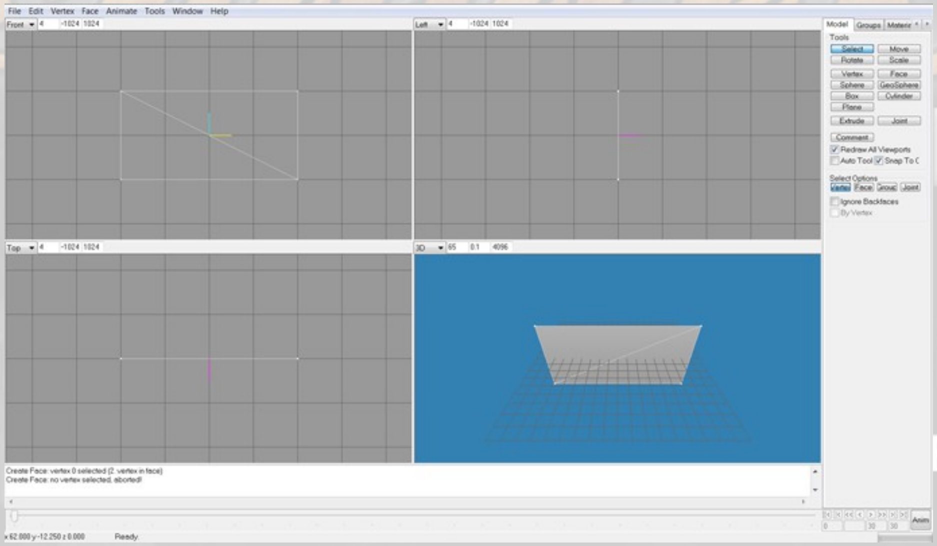
For this simply go to « **Model** ». Then click on the button (**Vertex**) and click in the scene where you want to add one point. Then click on « **Face** » and try to relate 2 vertex points of the « **Triangle** » you have made to the new vertex point you have added to create a face linked to your triangle.

Remember to create a face requires only 3 vertex points.

So if you would like to create a square, you could create (**4 Vertex Points**). But note that you must relate (**Only 3 vertex points**) to create a face. I have tryed to "**Create Face**" by selecting (**4 Vertex Points**) at one time, but the software told me that it can only create a face with (**3 Vertex Points**) that is selected not more vertex points or less.

Turning One Edge Between Four Vertex Points

This is only for turning only "**One Common Edge**" of (**Two Related Faces**) that are between "**Four Vertex Points**".



```
Create Face: vertex 0 selected (2. vertex in face)
Create Face: no vertex selected, aborted!
```

x 62.000 y -12.250 z 0.000 Ready.

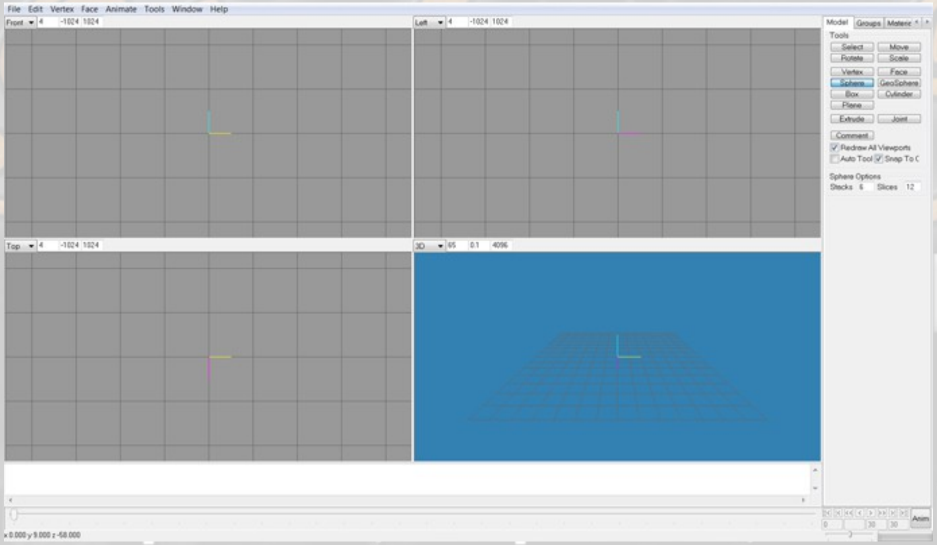
For this you must select the « **Two Faces** », this is done with the button and select option (**Select Face**). Then simply perform a « **Boundary Inner Box** » of the two (**Faces Selected**).

On the image beside of this text you see « **2 triangles** » that form a rectangle. The face « **Plane** » is a rectangle that can have multiple triangles.

Once you have the « **Two Selected Faces** » sharing (**One Common Edge**), you then select the top text menu named « **Face** » and then select the option called (**Turn Edge**).

You should notice that the « **Common Edge** » of the (**Two Faces**) that share « **Four Vertex Points** » has changed and now the (**Same Common Edge**) is related to the other vertex points.

Creating a Sphere



Sphere Options
Stacks 6 Slices 12

To create a sphere in the tab « **Model** », you click on the button named (**Sphere**). Before creating your sphere you should notice the « **Sphere Options** » with two rectangles where you can type some numbers into them. By default, the number of « **Stacks** » is (**6**) and « **Slices** » is (**12**).

« **Stacks** » are how many levels there are. We can (**Compare it**) to a building, such that « **Each Floor** » of the building has. The floors levels (**Dont Touch Together**).

« **Slices** » make lines that join together in the middle. Like a pizza, the (**Slices**) cross and meet in the center.

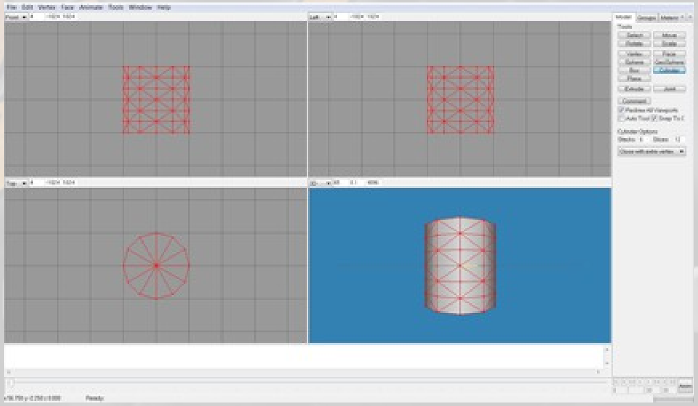
The next thing is to keep the (**LMB**) pressed into one of the « **Scenes** », after you drag your mouse to form your (**Sphere**).

(**Note**): The higher the number of "**Stacks**" and "**Slices**" will make the (**Sphere**) become more round; but will also make the 3D model "**Weight Much More**". So for slow or old computers (**Too Many Polygones**) can become "**Very Irritating**".

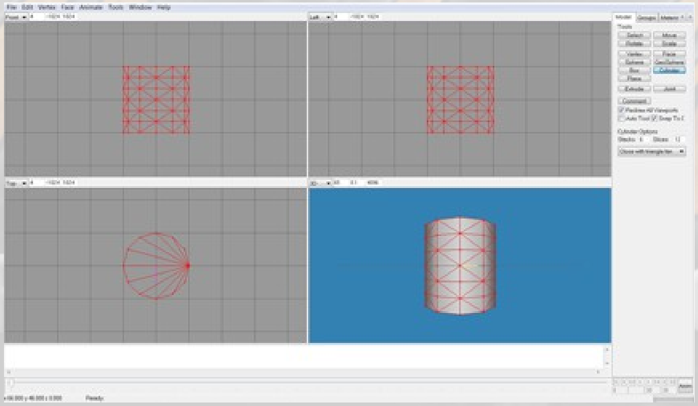
If your sphere in the "**3D Scene**" isn't very round, you can perform a (**RMB**) from the "**Same Scene**". When you see a menu popup, just "**Check Mark**" the option for (**Smooth Shading**).

If you want that the 3D models in your game work better and faster so it can be played on many systems, then it's best that your 3D models have not too many polygones and is light weight. You can display the "**Info**" of your model by the (**Top Text Menu**). You then select "**Tools**" and then select (**Show Model Statistics**).

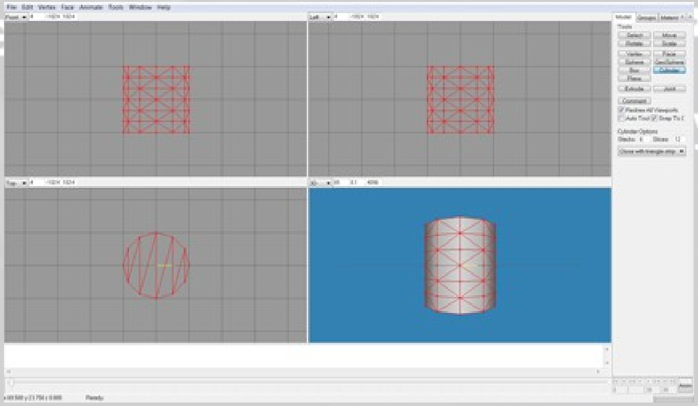
Creating a Cylinder, the Top View Difference



Extra Vertex



Triangle Fan



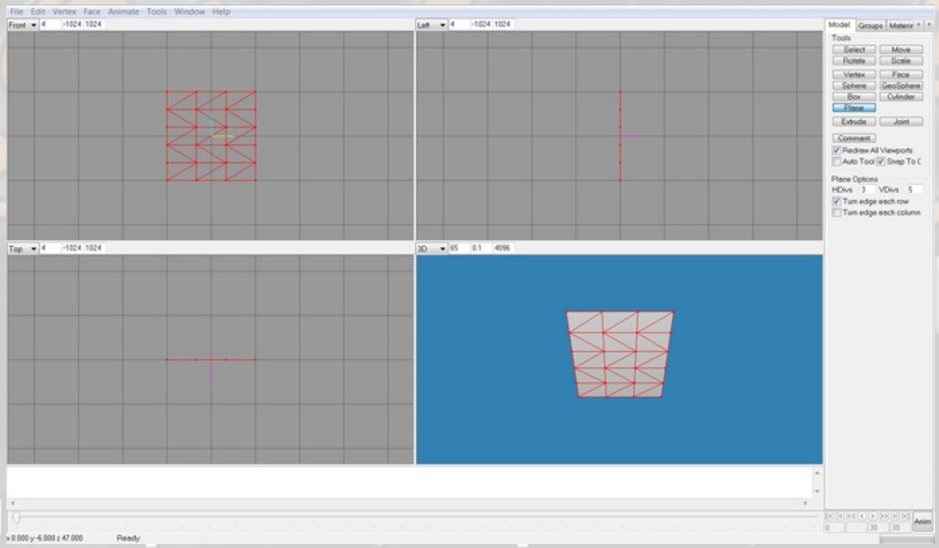
Triangle Strip

Before creating a cylinder, there are some « **Cylinder Options** ». Notice the (**Top View Scene**). Polygones are made differently> I prefer the Cylinder Option « **Extra Vertex** ». You should notice even if the numbers of « **Stacks** » and the number of « **Slices** » can be the same; the (**Top View**) is different.

If you choose the option « **Don't Close** », you should notice that the Cylinder has « **No Bottom and No Top** » by looking at it in the (**3D Scene View**) at some angles and options.

I have read online that when the number of "**Stacks**" is higher that it could help by using some (**Mesh Editing**). I dont know much about "**Mesh Editing**", but maybe someday I'll include it in a new book. For now, it's just some basics for you.

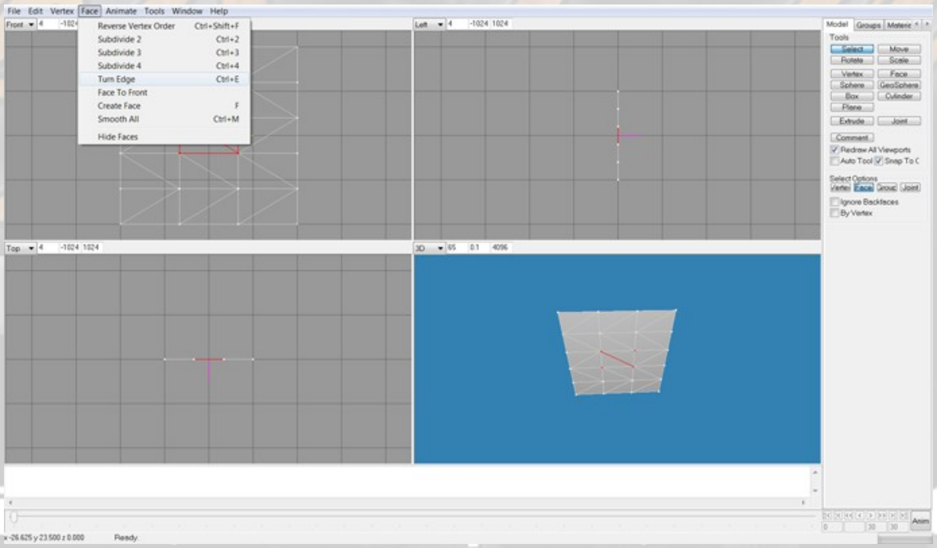
Creating a Plane



☑ Redraw All Viewports
☐ Auto Tool ☑ Snap To C

Plane Options
HDivs 3 VDivs 5
☑ Turn edge each row
☐ Turn edge each column

Click on the option (**Plane**) from the « **Model** ». Before creating your plane, you should notice the « **Plane Options** ». « **HDivs** » is for the (**Horizontal Divisions**) and « **VDivs** » is for (**Vertical Divisions**). Just try at first to create some planes by changing the numbers in the rectangle. The next thing to try is simply create again some new planes and do some « **Check Mark** » on the options (**Turn Edge Row**) and (**Turn Edge Column**). You should notice that the « **Diagonal Lines** » are in some diagonal direction.



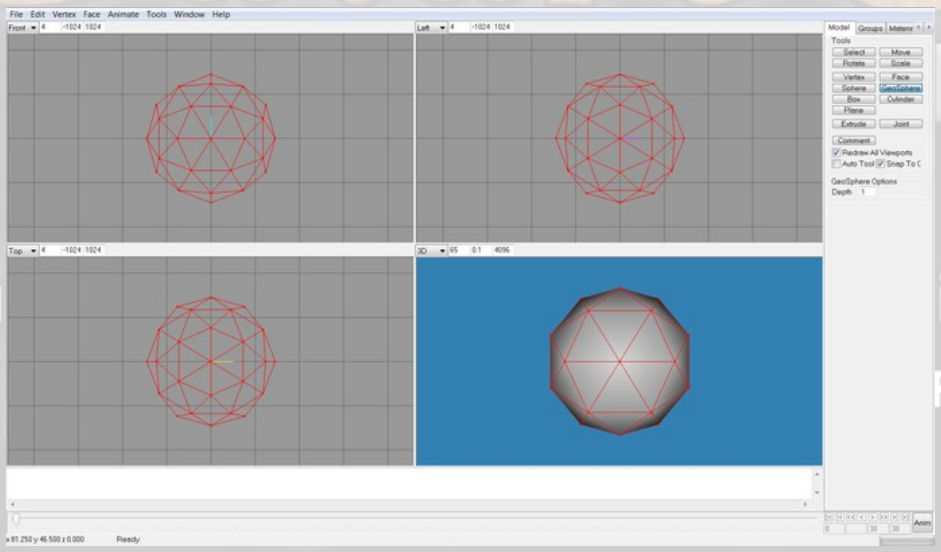
☑ Redraw All Viewports
☐ Auto Tool ☑ Snap To C
☐ Ignore Backfaces
☐ By Vertex

Recall that on a previous page I told you about « **Turning a Common Edge** » by selecting 2 faces that share a (**Common Edge**).

When only the two faces are selected, you can click on the « **Top Text Menu** » option named (**Face**) then the option named (**Turn Edge**).

Creating a Geosphere

A geosphere is an other type of sphere made of triangles where each triangle is "**Equilateral**" meaning that the 3 edges forming the triangle (**Is Equal**). Note that entering more than "**3**" into the (**Dept**) of the "**Geosphere Options**" requires a lot of mathematical calculations for your computer. So it can take a (**Lot of Time**) for your computer to create it.



☑ Redraw All Viewports
☐ Auto Tool ☑ Snap To (

GeoSphere Options
Depth 1

For this, you click at the « **Model** » tab. Then you click on the button (**Geosphere**). Note the « **Geosphere Options** ».

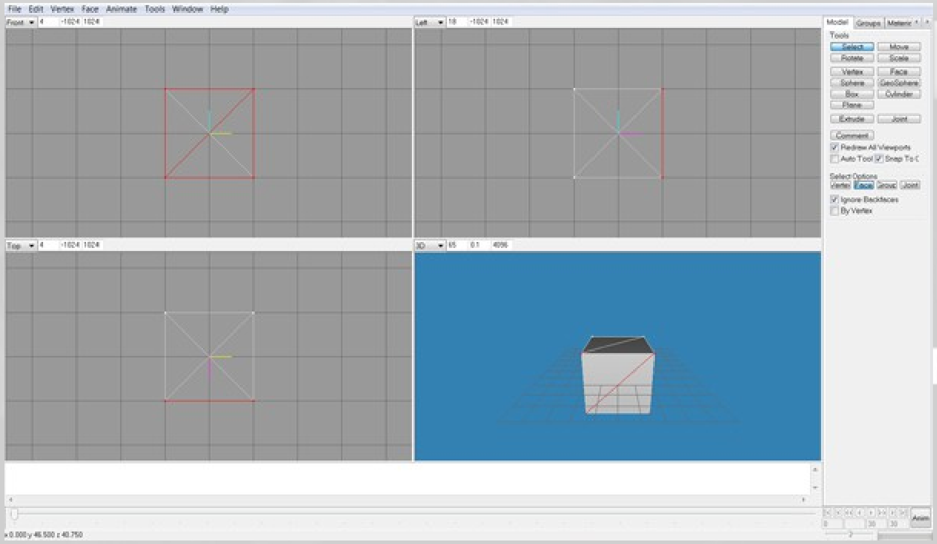
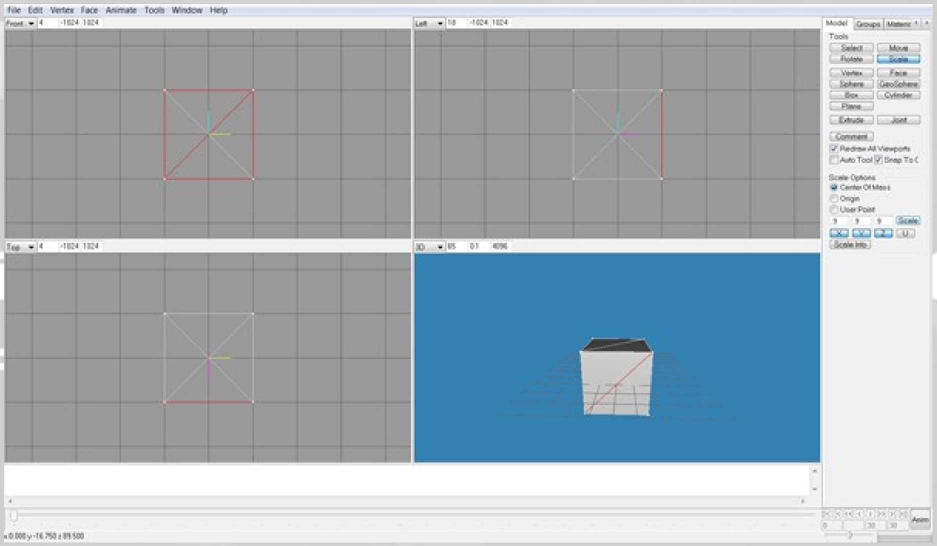
In one of the scenes you keep pressing the (**LMB**) and simply drag your mouse. This forms the « **Geosphere** ».

Note where you point and drag your mouse. The « **Center** » of your Geosphere is your (**Starting Dragging Point**).

Remember when the "**Dept**" number is higher then (**3**); it can take a lot of time on some computers to create the Geosphere. This is because the computer has to calculate "**Each Edge**" of (**Each Triangle**).

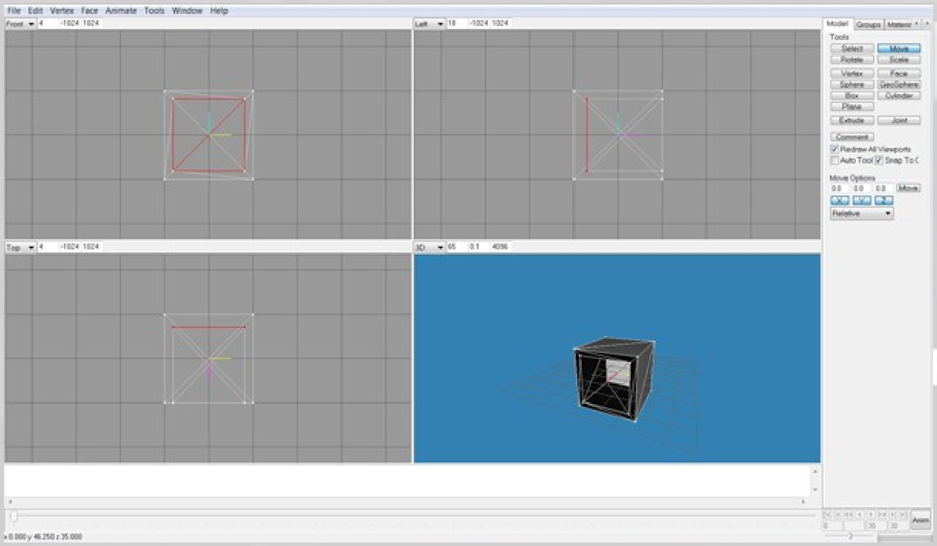
Extruding

What is extruding? Well depending of what "**Face Selected**", the process if i'm correct of (**Extruding**) is to make a "**Copy**" of your face selected. But your (**Face Extruded**) can still be "**Linked**" to what you have selected when you have clicked on the (**Extrude Button**). We will do some exercises here so you should understand "**Extruding**". We will create a hollow cube seen on a youtube video.

	
First create a « **Cube Box** ». Then you will « **Select Face** » with the option (**Ignore Backface**) checked. Then you click on the button « **Extrude** ». You should see 3 box's with the numbers (**0.0**) into each. Then, click on the button « **Just Beside** » the option named (**Extrude**).	Next, click on the « **Scale Button** . You should choose the option (**Center of Mass**), and then type the number (**0.9**) into the 3 little white boxes. Then you click 3 times on the button to the left of the numbers « **Just Beside** » the option named (**Scale**). This will form a square into your square face.

Extruding (Part 2)

You should also know that "**Extruding**" is not only copying the (**Face Selected**). It is telling the software if Im correct what is the "**Starting Positon**" of your face that is extruded if you choose to move, scale it or rotate it. We will now continue the steps.

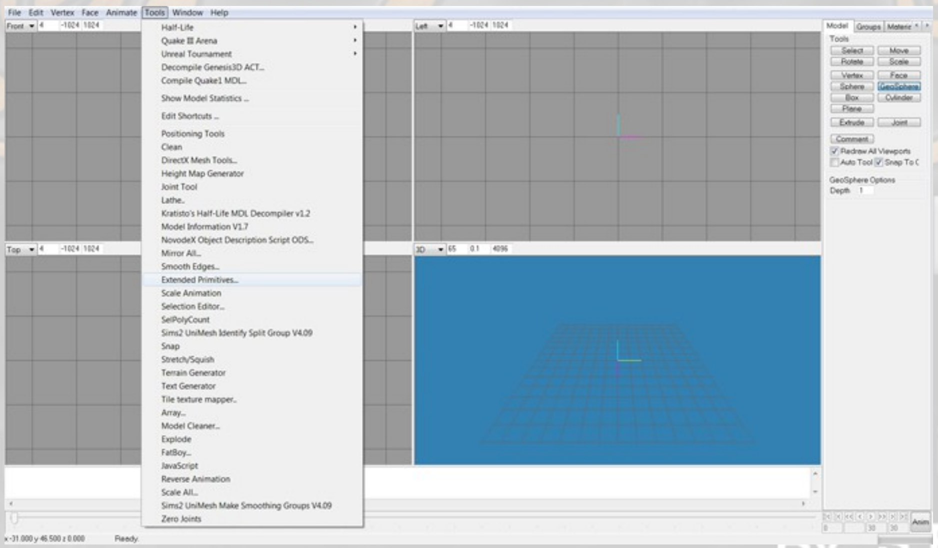


When your inner square face is formed and still selected, you then click once again on (**Extrude**). You should again check that the numbers are (**0.0**). Then click on the button just beside the option named (**Extrude**). You can now try it to « **Move It** » where you want.

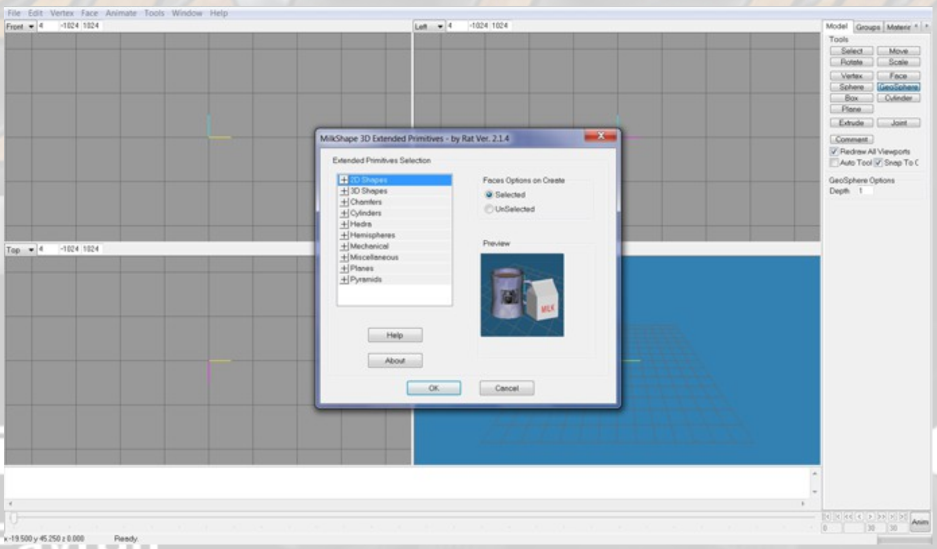
By reading on the web, it seems unfortunate that the option to do a (**Boolean Operation**) is not available for now. It would be good to be able to perform a (**Boolean Operation**) like if you would want to « **Cut** » into your 3D model, to make a hole as I said in one of my previous guides.

Dont hesitate to do your own experiments. I'm sure that you'll do just fine.

Integrated Milkshape3D Models



Milkshape3D can do many models. Here are some integrated models that Milkshape3D has. For this, you click on the « **Top Text Menu** » that is named (**Tools**) and choose (**Extended Models**). This will make a menu popup.



By clicking on one of the (**+'s**), you can extend it's directory so you can see different 3D models. You see the picture of the model. If you want to see the model, you simply click on the (**Ok Button**) or if you dont want (**Cancel Button**).

If the size of the 3D model is small, I'm sure that you know how to "**Scale**" to make it bigger; or do other changes to your 3D model to modify it as you want. Have fun with the "**Sphere**", with the "**Cylinder**", with the "**Cube**" and others. Try to move some "**Vertex Points**", move some "**Edges**". Also try to "**Rotate**" and "**Mirror**" some faces. Like I say "**Have Fun**" by creating some (**Weird 3D Models**).

A Few Experiments

Here are a few things I'd like you to try:

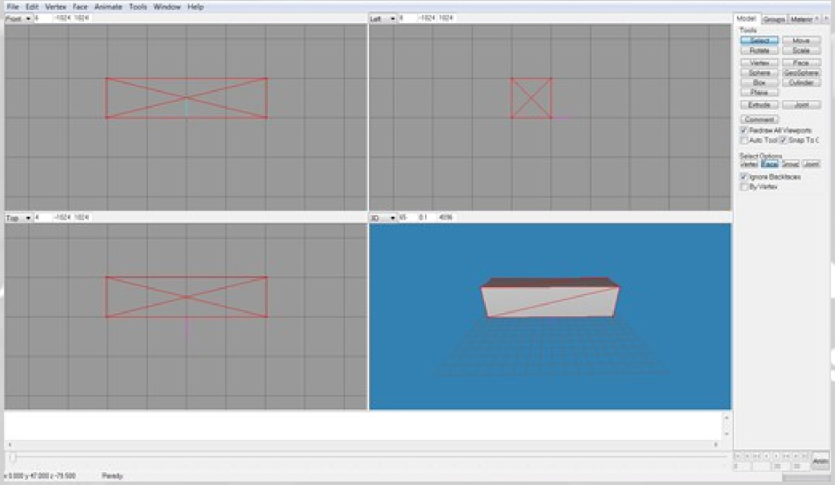
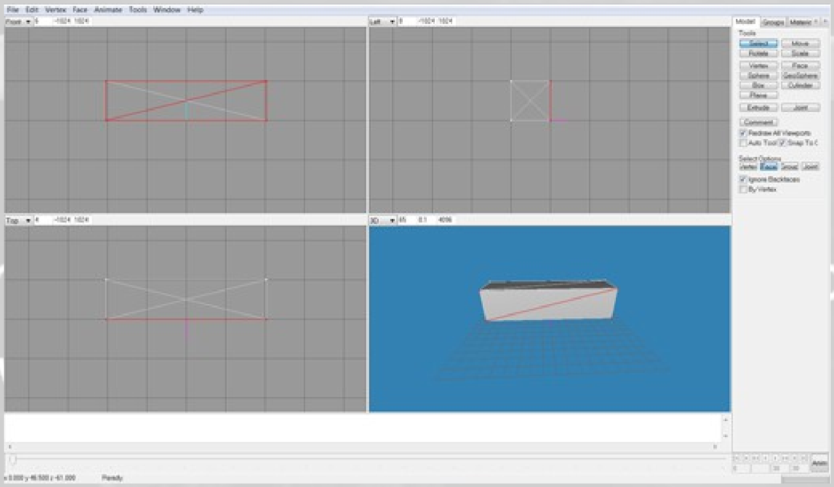
Experience 1 : « **Create a Sphere** », then select (**Half Vertex Points**) by draging a boundary box of the sphere, which should select half the model. Then « **Delete** » the vertex points. Then select the option on the « **Top Text Menu** » named (**Vertex**). after this, select to the option « **Flatten** » and then choose one of the options to experiment.	Experience 2 : « **Create a Cylinder** ». Then select (**1/3**) of the cylinder end « **Vertex Points** » by creating a boundary box. Then from the tab « **Model** ». choose one of these buttons (**Rotate** or **Move** or **Scale**). Then try some experiments to see the changes you make to the cylinder. It's fun and funny what you can do! You can also try to select some vertex points in the middle of the cylinder to experiment like scaling and others.
Experience 3 : « **Snapping a Vertex** » Create again a (**Cylinder**), then select « **Only the Ending Vertex Points** ». Then select the option on the « **Text Menu** » named (**Vertex**) after the word « **Snap Together**). This is how the « **Vertex Points Choosen** » snap together. This should result a cylinder that has a pointing nose. If it did not work, it's possible that you have selected the vertex points; and that you did not unchecked (**Ignore Backfaces**).	Experience 4 : « **Create a Box** ». Then select a (**Face**). Then, select the « **Top Text Menu** » option (**Face**) after one of the options « **Subdivide** ». This could help you to make a face have multiple vertex points that form some faces.

There are many things that you can do to experiment. My knowledge is not great; but I'm glad to share it with you.

Futurepinball, Gopinball, Pinsimdb, Milkshape3D, FPMeditor
By: S.Favron

Select a Face for a Texture

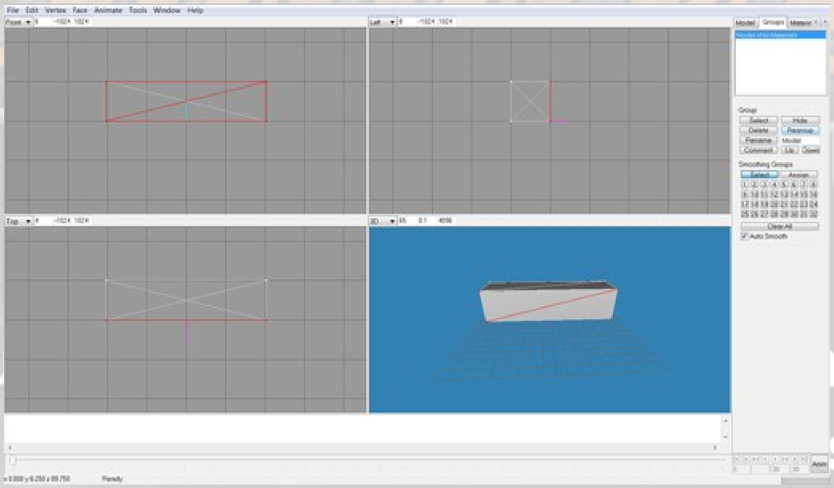
1 - First start from "**New**" in the software Milkshape3D. Then point your mouse on one of the scenes and press the (**RMB**) to see some options shown. Then, click on the option "**Reset View**". Do this for each of the four scenes. This should reset the view to it's default.

	
2 - Create a « **Box** » that should be a rectangle of 4 by 1 squares in the (**Front View**), 4 by 1 squares in the (**Top View**) and 1 by 1 square in the (**Left View**) as shown in the image here. You can then « **Scale** » and « **Move** » the rectangle to look as the image.	**3** – Next, click on the « **Select** » option (**Face**) and check mark « **Ignore Backface** ». Try to select only the « **Front Face** » in the (**Front View Scene**). You should notice by the different scenes that the (**Front Face**) is selected, because the color « **Is Red** » by default.

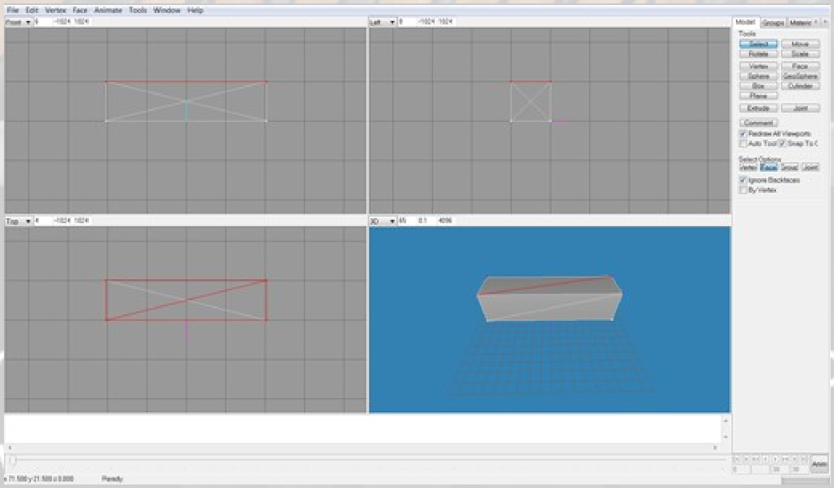
You can try if you want the difference of what happen if you select and choose or not "**Ignore Backface**". But here we only want the (**Front Face**) to be selected. "**Note**" for putting a (**Texture**) it is important that a "**Front Face is Selected**".

Let's Add a Texture (Con't)

If you have correctly "**Selected the Face**", then your complete model should be in the (**Group Tab**).



4 – You then go at the tab « **Groups** » and check if only the (**Front Face**) is selected. If « **Yes** » click on the button writen (**Regroup**). This will make a new group. Then you write in the white rectangle box the word « **Front** » and click on the button just beside writen (**Rename**). You could call it as you want, we just want to be clear here of what face will be textured. So here (**Front**) for the (**Front Texture**).

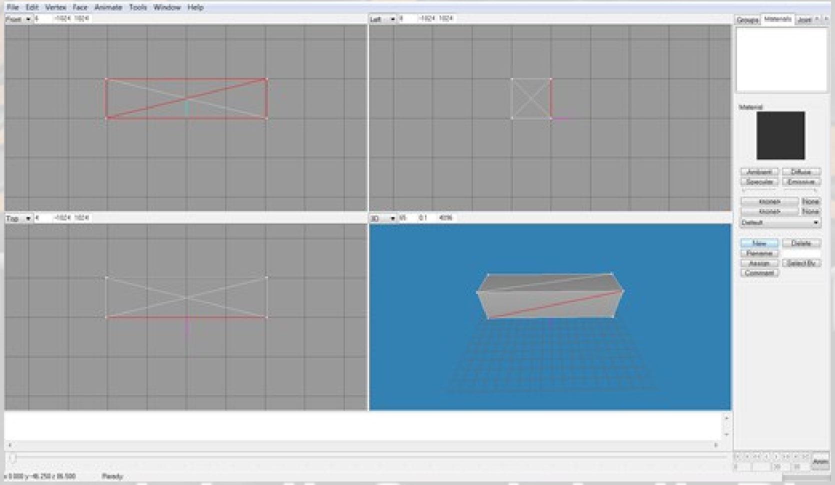


5 – Go back to the « **Model** » tab, but then only select the (**Top Face**). Next again go to the « **Groups** », after click on the button (**Regroup**) and give it the name « **Top** ».

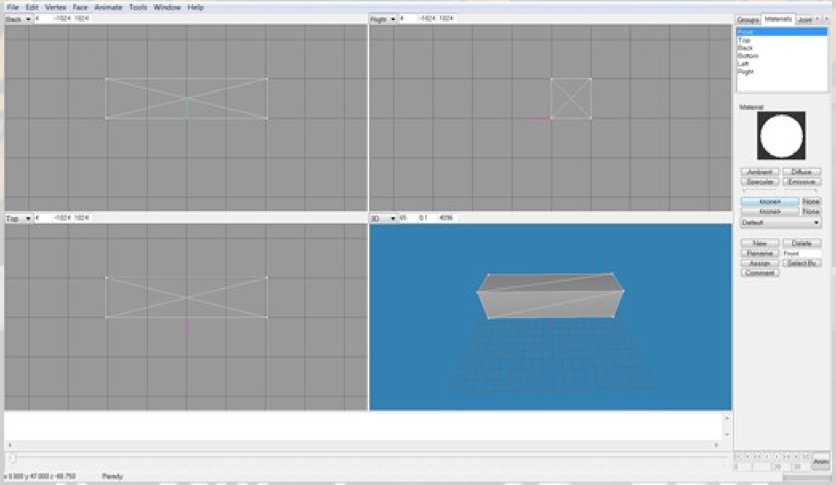
I'm sure you have guessed to do the same things for each sides, wich is (**Bottom**), (**Back**), (**Left**), (**Right**).

In the "**Groups Tab**" if you (**Double-Click**) the word "**Front**" or "**Top**". You notice that you can (**Select**) and (**Unselect**) the face you want. We will discuss later about this important part also.

Let's Add a Texture (Con't)



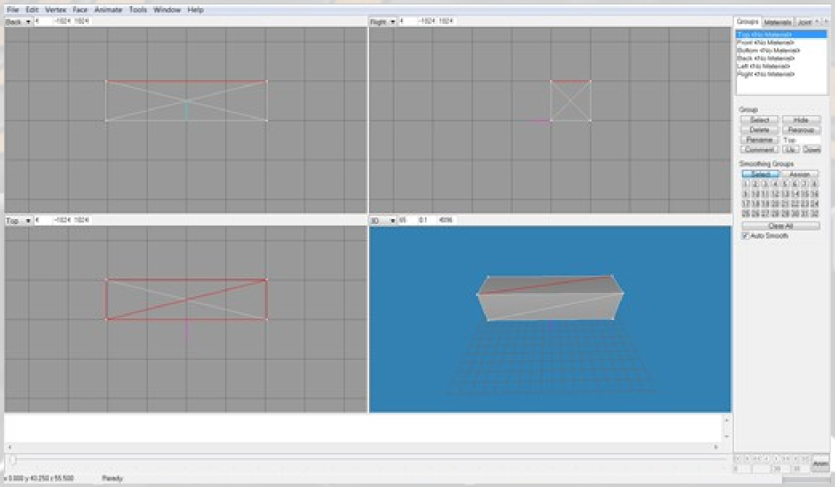
6 – Go to the tab « **Materials** » and then click on the button (**New**). You should then see a « **Sphere** » in the square named (**Material**). I don't know much about the options, but I suggest that you to click on one of the buttons (**Ambiant**), (**Diffuse**), (**Specular**) or (**Emissive**). It will pop up a window and I suggest that you choose the « **Color White** » for each of them. Note that for each « **New Materials** », we will rename it (**Front** / **Back** / **Bottom** / **Top** / **Left** / **Right**) for the rectangle faces to make it easier.



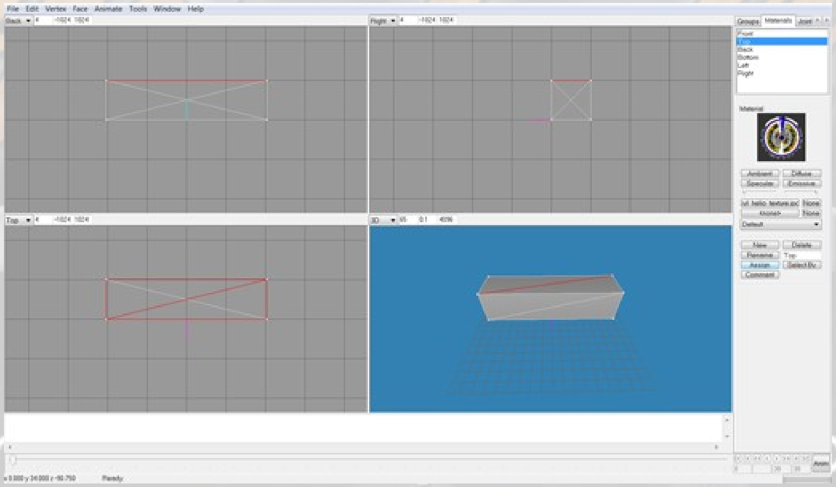
7 – On the image here, you click simply on the button named « **None** » that is colored in (**Blue**). This will make a window pop up and let you choose the image file texture that you want. You can choose 1 image for each face. You can also choose an image for more than one face of your model. In this exercise, I have created an image of the size 400px width by 500px height. I made 5 sections in the images (4 sections for the big rectangles) and (1 section for the left and right faces).

Here is the (URL LINK) of the image and model that I have created. I am not responsible for any damage, this may make to your PC. I write this in case if some people change the link of the file here. So I suggest that you create your own model and textures for your safety.

Let's Add a Texture (Con't)



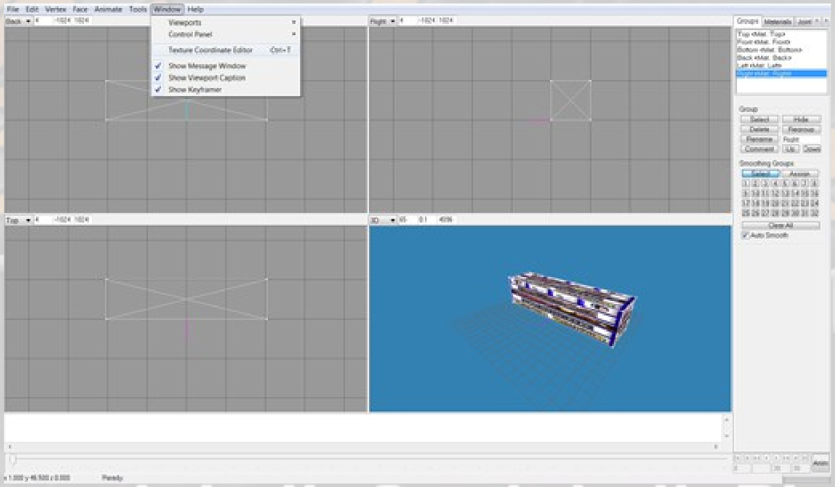
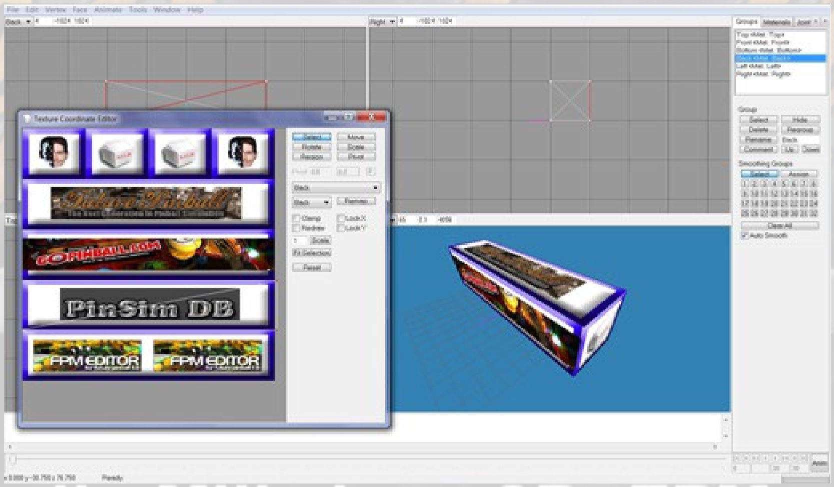
8 – Go to the « **Groups** » tab, then (**Double-Click**) on the face that you want to be textured. If it is selected by default, it is colored in « **Red** » as seen here. Just select one of the faces, « **Not more** » in this exercise. When the face is (**Selected**) and in (**Red Color**), then click on the tab « **Materials** ».



9 –You have previously selected the « **Top Face** ». Then in the materials, « **Highlight** » the material named (**Top**). Then click on the button « **Assign** ». It simply indicates the (**Face Group Selected**) that you have (**Assigned**) a texture to it. Do the same for each of the faces selected **Top/Bottom/Front/Back/Left/Right**) in the group. « **Assign** » the materials that are named (**Top/Bottom/Front/Back/Left/Right**)

On the next page will be the step that is called "**Texture Mapping**". The process is to position your face model correctly on the texture. After saving your Milkshape3D file, it will have some positioning information related to the image texture.

Texture Mapping

 File Edit Vertex Face Animate Tools Window Help Viewports Control Panel Texture Coordinate Editor Ctrl+T Show Message Window Show Viewport Caption Show Keyframer	 Texture Coordinate Editor Select Move Rotate Scale Remap PinSim DB FPM EDITOR
To map a texture, you « **Must First** » select the face you want to texture in the (**Group Tab**). Then you click on the « **Top Text Menu** » option named (**Window**) after the text « **Texture Coordinate Editor** ». This make a window pop up.	In this image, you notice that the « **Back Face** » in the group tab is selected that has turned (**Red**) to indicate it is selected. The next thing is to choose the (**Face**) and then right under it, the (**Material**). In the image, you will notice it is also « **Back** ». After you click on the button (**Remap**), it make the face you have selected appear as a « **Wireframe** » over the texture selected. Then you simply click on the button « **Region** ». With your (**LMB**), drag a boundary box on the zone you want. You can again press the (**Remap**) button. Dont worry about making mistakes. Try the(**Scale**), (**Move**), (**Rotate**); and drag your mouse.

The face you want textured, must be selected before using "**Texture Editor**". I hope this book have helped you? Have fun!

Created by : Sylvain Favron, with the help of other peoples.